



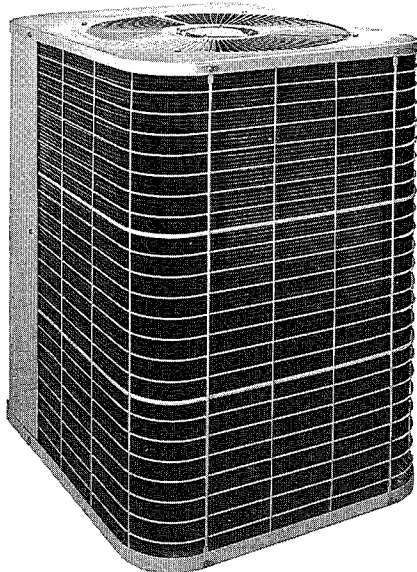
Bryant
Air Conditioning

Indianapolis, IN
City of Industry, CA

SPLIT-SYSTEM HEAT PUMP UNITS

MODEL 690A (60 Hz)

Sizes 018 thru 060



The 690A Outdoor Sections of Split-System Heat Pumps are designed for quiet, reliable heating during the winter and cooling during the summer. These heat pump systems provide economy of operation through energy conservation. They recover heat for indoor comfort from outdoor air during the heating season and, by automatically reversing the refrigerant system, remove indoor heat and excess humidity during the cooling season. All models are listed with UL, CSA, CEC and ARI.

FEATURES

ELECTRICAL RANGE—All single-phase units are offered in 208/230 volts. Three-phase available in both 208/230 and 460 volt.

COMPRESSOR—Designed specifically for heat pump duty, with energy efficiency during heating and cooling operation. Each compressor is hermetically sealed against contamination to assure long life and dependable performance, internally sprung and externally mounted on rubber isolators for quiet operation. Continuous compressor operation is approved down to -30°F (-34.4°C) in the heating mode, and down to 55°F (12.8°C) in the cooling mode. (See heating and cooling performance tables.) All models include a discharge-tube muffler to prevent sound transmission of the compressor pulsations to the indoor or outdoor coils.

BUILT-IN-RELIABILITY COMPONENTS—Includes a suction-tube accumulator that keeps liquid refrigerant from reaching the compressor; a low-pressure switch that stops the compressor if refrigerant charge is lost; a crankcase heater to keep the compressor oil warm and free of refrigerant for maximum lubricity; an internal compressor relief valve for high-pressure protection; and compressor start capacitor and relay components on single-phase units to assure reliable starting of the units during brownout conditions and low outdoor temperatures.

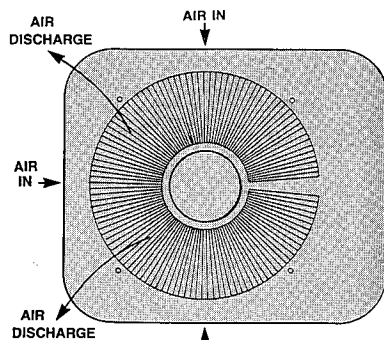
DEFROST CONTROL BOARD—Incorporates a defrost relay, defrost timer, and low-voltage terminal board. The defrost control is a time/temperature initiation/termination control which includes three field-selectable time periods of 30, 50, and 90 minutes.

WEATHER-PROTECTIVE CABINET—Steel is protected with a heavy coating commonly called "galvanizing," then coated with a layer of zinc phosphate to which a coat of modified polyester powder coating is applied and baked-on. This provides each unit with a hard, smooth finish that will last for many years.

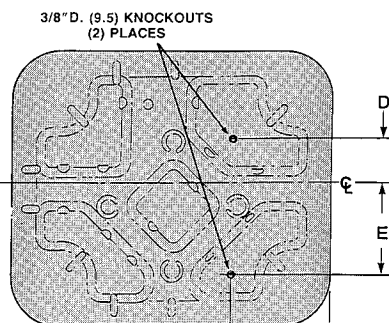
All screws on cabinet exterior are coated for a long-lasting rust-resistant, quality appearance.

UNIT DESIGN—All units are equipped with totally enclosed fan motors for greater reliability under rain and snow conditions. (Ball bearing fan motors standard on 3 phase units.) The large, wraparound coil uses copper tube and enhanced aluminum fin and is designed for optimum heat transfer during heating and cooling. The vertical air discharge carries the sound and air up and away from adjacent patio areas and foliage. Sufficient space is provided between rows of composite coils so they can be cleaned with a common garden hose.

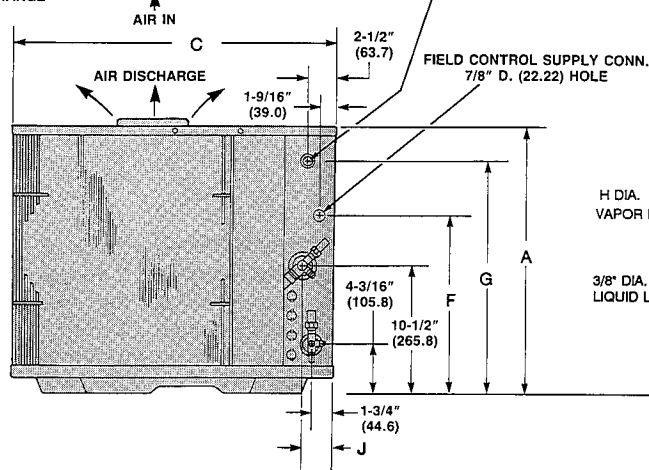
EXTERNAL SERVICE VALVES—Both service valves are brass, back seating type with sweat connections. Each valve has a service port for ease of checking operating refrigerant pressures.



- NOTES:
1. ALLOW 2'-6" (762) CLEARANCE TO SERVICE END OF UNIT, 4'-0" (1219) ABOVE UNIT, 6" (152) ON ONE SIDE, 1'-0" (305) ON REMAINING SIDE, AND 2'-0" (610) BETWEEN UNITS FOR PROPER AIRFLOW.
 2. MINIMUM OUTDOOR OPERATING AMBIENT IN COOLING MODE IS 55°F (12.8°C), (UNLESS LOW AMBIENT CONTROL IS USED), MAXIMUM 125°F (51.7°C).
 3. MAXIMUM OUTDOOR OPERATING AMBIENT IN HEATING MODE IS 86°F (18.9°C).
 4. DIMENSIONS IN PARENTHESIS ARE IN MILLIMETERS.
 5. SERIES DESIGNATION IS THE 13TH POSITION OF THE UNIT MODEL NUMBER.



UNIT MOUNTING PATTERN
VIEW FROM TOP



H DIA.
VAPOR LINE CONN.

3/8" DIA. (9.53)
LIQUID LINE CONN.

UNIT RATING
PLATE

SERIAL	
MODEL	
PRODUCT NO.	
PISTON	ID DO
FACTORY CHARGED R-22	
LBS	KG
POWER SUPPLY	VOLTS
PH	HZ
PERMISSIBLE VOLTAGE AT UNIT	
MAX	MIN
SUITABLE FOR OUTDOOR USE	
COMPRESSOR	
FAN MOTOR	
DESIGN/TEST PRESSURE RAGE	
HI PSI	KPa
LG PSI	KPa
MINIMUM CIRCUIT AMPS	
MAX OVERCURRENT PROTECTIVE DEVICE	
TYPE	USA CANADA
MAX FUSE	
MAX HACR DCT-BKR	N/A
MAX DCT-BKR	N/A
CARRIER CORP INDIANAPOLIS IN 4806	

DIMENSIONS

UNIT	SERIES	OPER. WT.		A		B		C		D		E		F		G		H		J	
		LBS	KG	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)
690A018	A, B	152	68.4	25-7/8	657.2	22-1/2	571.5	26-1/4	665.1	4-1/8	104.7	7-1/8	180.9	16	404.8	22-3/8	568.3	5/8	15.88	2-3/8	60.3
690A024	A	164	73.8	25-7/8	657.2	22-1/2	571.5	26-1/4	665.1	4-1/8	104.7	7-1/8	180.9	16	404.8	22-3/8	568.3	3/4	19.05	2-3/8	60.3
690A030	A, B	178	80.1	31-7/8	809.6	22-1/2	571.5	26-1/4	665.1	4-1/8	104.7	7-1/8	180.9	22	557.2	28-3/8	720.7	3/4	19.05	2-3/8	60.3
690A031	A	214	96.3	31-7/8	809.6	30	762.0	33	838.2	5	128.5	9-3/4	246.0	22	557.2	28-3/8	720.7	3/4	19.05	3	74.5
690A036	A, B	231	104.0	31-7/8	809.6	30	762.0	33	838.2	5	128.5	9-3/4	246.0	22	557.2	28-3/8	720.7	3/4	19.05	3	74.5
690A042	A, B	253	113.9	37-7/8	962.0	30	762.0	33	838.2	5	128.5	9-3/4	246.0	28	709.6	34-3/8	873.1	7/8	22.22	3	74.5
690A048	B	269	121.1	31-7/8	809.6	30	762.0	33	838.2	5	128.5	9-3/4	246.0	22	557.2	28-3/8	720.7	7/8	22.22	3	74.5
690A048	D	285	128.3	37-7/8	962.0	30	762.0	33	838.2	5	128.5	9-3/4	246.0	28	709.6	34-3/8	873.1	7/8	22.22	3	74.5
690A060	A	289	130.1	37-7/8	962.0	30	762.0	33	838.2	5	128.5	9-3/4	246.0	28	709.6	34-3/8	873.1	7/8	22.22	3	74.5

RECOMMENDED TUBE DIAMETERS

SIZE	TUBE LENGTH (Ft)*	LIQUID-TUBE DIAMETER (In.)	VAPOR-TUBE DIAMETER (In.)
018	0 to 50	3/8	5/8
024, 030, 031, 036			3/4
042			7/8
048, 060			1-1/8

*For tube set over 50 feet, consult Long-Line Application Guideline. In downsize fan coil applications, tube set over 50 feet is NOT applicable. See page 20 for fan coil downsizing requirements.

CHECK-FLO-RATER™ CHART

HEAT PUMP SIZE	OUTDOOR PISTON	INDOOR* PISTON
018-A	42	49
018-B	38	52
024-A	46	61
030-A, B	55	67
031-A	55	67
036-A	59	76
036-B	59	73
042-A	61	78
042-B	61	80
048-B	70	86
048-D	67	86
060-A	76	90

*Piston listed is for any approved coil combination. Piston is shipped with the outdoor unit and must be installed.



CERTIFICATION APPLIES ONLY
WHEN THE COMPLETE SYSTEM
IS LISTED WITH ARI.

SPECIFICATIONS-690A

SIZE	018-A	018-B	024-A	030-A	030-B	030-A	030-B	031-A	036-A
OPERATING WT (lb)	152	152	156	182	182	182	182	225	225
ELECTRICAL									
Unit Volts—Hertz—Phase	208/230—60—1	208/230—60—1	208/230—60—1	208/230—60—1	208/230—60—1	208/230—60—3	208/230—60—3	208/230—60—1	208/230—60—1
Operating Voltage Range†††	187—253	187—253	187—253	187—253	187—253	187—253	187—253	187—253	187—253
Unit Ampacity for Wire Sizing	12.2	12.1	17.7	21.8	23.2	14.6	14.8	21.8	28.7
Min Wire Size (60°C/75°C Copper) (AWG)*	14/14	14/14	14/14	12/12	12/12	14/14	14/14	12/12	10/10
Maximum Length (feet) (60°C/75°C)†††	61/61	61/61	42/42	55/55	51/51	44/44	43/43	55/55	66/66
Max Branch Circuit Fuse Size (Amps)‡	20	20	30	35	40	25	25	35	50
Compressor Rated Load Amps	9.1	9.0	13.5	16.8	17.9	11.0	11.2	16.7	21.8
Locked Rotor Amps	52.0	49.0	71.0	82.0	83.5	67.5	66.0	86.0	106.0
Fan Motor, HP & RPM	1/10 & 1075	1/10 & 1075	1/10 & 1075	1/10 & 1075	1/10 & 1075	1/10 & 1075	1/10 & 1075	1/10 & 1075	1/4 & 1100
Full Load Amps	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	1.4
COMPRESSOR AND REFRIGERANT									
Compressor	Hermetic								
Refrigerant Charge (lb)†	4.73	4.80	4.56	5.19	5.06	5.19	5.06	7.00	6.78
OUTDOOR COIL & FAN									
Coil Face Area (Sq Ft)	8.50	8.50	8.50	10.50	10.50	10.50	10.50	15.00	15.00
Airflow (CFM)	1900	1900	1900	1900	1900	1900	1900	2600	3000
OPTIONAL EQUIPMENT									
Support Feet Kit—4-inch (4)	313916-701								
Snow Rack	313071-701							313072-701	
Indoor Time-Delay Relay	313902-751								
Energy Minder	941AHX000000 MCAA								
Efficiency Alarm††	313076-751								
Bypass Solenoid Valve—Defrost	314003-751								
Outdoor Thermostat	313074-751								
Secondary Outdoor Thermostat	313074-752								
COMPROTEC®	313966-751								
Crankcase Heater	Standard								
Compressor Start Assist	313965-752		313965-753	313965-755	313965-754	N/A		313965-755	
Sound Blanket	312990-751	312991-751		312994-751				312991-751	312994-751
Bi-flow TXV (RPB)	315175-752		315175-753			315175-754			315175-755
Bi-flow TXV (Hard Shutoff)***	315175-759		315175-760			315175-761			315175-762
Low-Pressure Switch	Standard								
High-Pressure Switch	313079-751					Standard		313079-751	
Filter Drier—Bi-flow (New Construction)	P504-8083S								
Filter Drier—Bi-flow (Add-on or Placement)	P504-8163S								
Low-Ambient Controller‡‡	316196-751								
Low-Ambient Motor**	316185-751					Standard		316185-752	316185-754
Evaporator Freeze Thermostat**	316584-751								
Isolation Relay**	316586-751								
Liquid Solenoid Valve	316556-752								
Thermostat/Subbase—Manual °F	HH07AT187								
Thermostat/Subbase—Auto °F	HH07AT186								
Thermostat/Subbase—Manual °C	HH07AT189								
Thermostat/Subbase—Auto °C	HH07AT188								
Thermostat/Subbase-Night Setback	HH07PE001								

See notes on page 5.

SPECIFICATIONS-690A

SIZE	036-B	036-A	036-B	036-A	036-B	042-A	042-B	042-A	042-B	042-A	
OPERATING WT (lb)	225	225	225	225	225	239	239	239	239	239	
ELECTRICAL											
Unit Volts—Hertz—Phase	208/230—60—1	208/230—60—3	208/230—60—3	460—60—3	460—60—3	208/230—60—1	208/230—60—1	208/230—60—3	208/230—60—3	460—60—3	
Operating Voltage Range†††	187—253	187—253	187—253	414-506	414-506	187—253	187—253	187—253	187—253	414—506	
Unit Ampacity for Wire Sizing	26.7	17.1	17.6	9.1	8.3	27.8	33.0	21.1	20.0	10.6	
Min Wire Size (60°C/75°C Copper) (AWG)*	10/10	14/14	14/14	14/14	14/14	10/10	8/10	12/12	14/14	14/14	
Maximum Length (feet) (60°C/75°C)‡‡‡	70/70	38/38	37/37	142/142	150/150	68/68	89/56	47/47	37/37	123/123	
Max Branch Circuit Fuse Size (Amps)‡	40	25	30	15	15	45	50	35	30	15	
Compressor Rated Load Amps	20.2	12.4	12.8	6.6	6.0	21.1	25.3	15.6	14.7	7.8	
Locked Rotor Amps	93.0	79.5	74.0	39.8	41.0	127.0	110.0	98.5	92.0	49.3	
Fan Motor, HP & RPM	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	
Full Load Amps	1.4	1.6	1.6	0.8	0.8	1.4	1.4	1.6	1.6	0.8	
COMPRESSOR AND REFRIGERANT											
Compressor	Hermetic										
Refrigerant Charge (lb)†	6.75	6.78	6.75	6.78	6.75	8.06	7.50	8.06	7.50	8.06	
OUTDOOR COIL & FAN											
Coil Face Area (Sq Ft)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	
Airflow (CFM)	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
OPTIONAL EQUIPMENT											
Support Feet Kit—4-inch (4)	313916-701										
Snow Rack	313072-701										
Indoor Time-Delay Relay	313902-751										
Energy Minder	941AHX000000 MCAA										
Efficiency Alarm††	313076-751										
Bypass Solenoid Valve—Defrost	314003-751										
Outdoor Thermostat	313074-751										
Secondary Outdoor Thermostat	313074-752										
COMPROTEC®	313966-751										
Crankcase Heater	Standard										
Compressor Start Assist	313965-754	N/A				313965-755	313965-765	N/A			
Sound Blanket	312994-751							314776-751	312994-751	314776-751	312994-751
Bi-flow TXV (RPB)	315175-755										
Bi-flow TXV (Hard Shutoff)***	315175-762										
Low-Pressure Switch	Standard										
High-Pressure Switch	313079-751	Standard				313079-751		Standard			
Filter Drier—Bi-flow (New Construction)	P504-8083S										
Filter Drier—Bi-flow (Add-on or Replacement)	P504-8163S										
Low-Ambient Controller‡‡	316196-751			316196-752			316196-751			316196-752	
Low-Ambient Motor**	316185-754	Standard				316185-754		Standard			
Evaporator Freeze Thermostat**	316584-751										
Isolation Relay**	316586-751										
Liquid Solenoid Valve	316556-752										
Thermostat/Subbase—Manual °F	HH07AT187										
Thermostat/Subbase—Auto °F	HH07AT186										
Thermostat/Subbase—Manual °C	HH07AT189										
Thermostat/Subbase—Auto °C	HH07AT188										
Thermostat/Subbase-Night Setback	HH07PE001										

See notes on page 5.

SPECIFICATIONS-690A

SIZE	042-B	048-B	048-D	048-B	048-D	048-B	048-D	060-A	060-A	060-A
OPERATING WT (lb)	239	270	286	270	282	270	282	290	290	290
ELECTRICAL										
Unit Volts—Hertz—Phase	460—60—3	208/230—60—1	208/230—60—1	208/230—60—3	208/230—60—3	460—60—3	460—60—3	208/230—60—1	208/230—60—3	460—60—3
Operating Voltage Range†††	414-506	187—253	187—253	187—253	187—253	414—506	414—506	187—253	187—253	414-506
Unit Ampacity for Wire Sizing	9.6	38.4	33.0	25.2	21.7	13.4	10.7	39.9	25.9	12.1
Min Wire Size (60°C/75°C Copper) (AWG)*	14/14	8/8	8/10	10/10	12/12	14/14	14/14	8/8	10/10	14/14
Maximum Length (feet) (60°C/75°C)‡‡‡	136/136	77/77	89/58	65/65	47/47	97/97	122/122	74/74	63/63	107/107
Max Branch Circuit Fuse Size (Amps)‡	15	60	50	40	35	20	15	60	40	20
Compressor Rated Load Amps	7.0	29.6	25.3	18.9	16.1	10.1	7.9	30.8	19.4	9.0
Locked Rotor Amps	46.0	135.0	114.0	105.0	84.0	55.0	42.0	142.0	130.0	65.0
Fan Motor, HP & RPM	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100	1/4 & 1100
Full Load Amps	0.8	1.4	1.4	1.6	1.6	0.8	0.8	1.4	1.6	0.8
COMPRESSOR AND REFRIGERANT										
Compressor	Hermetic									
Refrigerant Charge (lb)†	7.50	11.33	10.94	11.33	10.94	11.33	10.94	13.75	13.75	13.75
OUTDOOR COIL & FAN										
Coil Face Area (Sq Ft)	15.00	15.00	18.00	15.00	18.00	15.00	18.00	18.00	18.00	18.00
Airflow (CFM)	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
OPTIONAL EQUIPMENT										
Support Feet Kit—4-inch (4)	313916-701									
Snow Rack	313072-701									
Indoor Time-Delay Relay	313902-751									
Energy Minder	941AHX000000 MCAA									
Efficiency Alarm††	313076-751									
Bypass Solenoid Valve—Defrost	314003-751									
Outdoor Thermostat	313074-751									
Secondary Outdoor Thermostat	313074-752									
COMPROTEC®	313966-751									
Crankcase Heater	Standard									
Compressor Start Assist	N/A	313965-754	313965-764	N/A				313965-760	N/A	
Sound Blanket	314766-751	312997-751								
Bi-flow TXV (RPB)	315175-755	315175-756						315175-757		
Bi-flow TXV (Hard Shutoff)***	315175-762	315175-763						315175-764		
Low-Pressure Switch	Standard									
High-Pressure Switch	Standard	313079-751			Standard			313079-751	Standard	
Filter Drier—Bi-flow (New Construction)	P504-8083S									
Filter Drier—Bi-flow (Add-on or Replacement)	P504-8163S									
Low-Ambient Controller‡‡	316196-752	316196-751				316196-752		316196-751		316196-752
Low-Ambient Motor**	Standard	316185-754			Standard			316185-754	Standard	
Evaporator Freeze Thermostat**	316584-751									
Isolation Relay**	316586-751									
Liquid Solenoid Valve	316556-752									
Thermostat/Subbase—Manual °F	HH07AT187									
Thermostat/Subbase—Auto °F	HH07AT186									
Thermostat/Subbase—Manual °C	HH07AT189									
Thermostat/Subbase—Auto °C	HH07AT188									
Thermostat/Subbase-Night Setback	HH07PE001									

*The ampacity of non-metallic (NM) sheathed cable shall be that of 60°C (140°F) conductors per NEC 1990, article 336-26. If wire used is not as specified in chart, refer to applicable tables available in 1990 NEC.

†The factory refrigerant charge is sufficient for systems requiring up to 25 feet of interconnecting tubing. For tubing lengths other than 25 feet, see Installation Instructions for additional refrigerant requirements.

‡Time delay fuse. Single-phase units may use fuses or HACR-type circuit breakers (U.S. only) of same size as noted.

**Consult Low-Ambient Installation Instructions for application.

††For indicator light function, specified thermostat must be used.

‡‡Low-Ambient motor required for all single-phase units.

***Requires Start Kit (capacitor & relay).

†††Permissible limits of the voltage range at which the unit will operate satisfactorily. Operation outside these limits may result in unit failure.

‡‡‡Length shown is as measured one way along wire path between unit and service panel for a maximum 2% voltage drop.

N/A = Not applicable in this application.

NOTES: All motors/compressors contain internal overload protection.

Copper wire must be used from service disconnect to unit.

COMBINATION RATINGS

OUTDOOR UNIT	APPROVED INDOOR UNIT	ARI STANDARD RATINGS* (1-Ph and 3-Ph)										Sound Rating (Bels)
		CFM	TC	Cooling		EER 3-ph	Heating				Seasonal Efficiency HSPF	
				Seasonal Efficiency FDR.90‡	Without FDR.90‡		High Temp		Low Temp			
							TC	COP	TC	COP		
690A018-A	519DS/509AS018	675	17,000	8.20	8.00	—	17,600	2.56	9,700	1.76	5.80	7.8
	519DS/509AS019	675	17,700	8.50	8.20	—	18,100	2.68	9,900	1.80	6.10	7.8
	519E018	675	17,000	8.20	8.00	—	17,600	2.56	9,700	1.76	5.80	7.8
	519DS/509AS024	675	17,700	8.50	8.20	—	18,100	2.68	9,900	1.80	6.10	7.8
	519E024	675	17,700	8.50	8.20	—	18,100	2.68	9,900	1.80	6.10	7.8
	508A024	675	17,600	8.50	8.20	—	18,200	2.68	9,900	1.80	6.00	7.8
	510B024	675	17,300	8.20	8.00	—	18,300	2.74	9,900	1.82	6.10	7.8
	517EN018	675	16,600	8.00	7.70	—	18,100	2.62	9,900	1.76	6.00	7.8
	513C018	675	16,800	7.80	7.60	—	17,800	2.52	9,900	1.72	5.80	7.8
	516A018	675	17,200	8.50	8.20	—	17,900	2.72	9,700	1.80	6.10	7.8
	517EN024†	675	17,200	8.20	8.00	—	18,400	2.72	10,000	1.80	6.20	7.8
	517EN025	675	17,900	8.50	8.20	—	18,500	2.80	10,100	1.80	6.30	7.8
	513C024	675	17,200	8.20	8.00	—	18,000	2.66	9,900	1.80	6.00	7.8
	516A024	675	17,400	8.50	8.30	—	18,200	2.72	10,000	1.80	6.20	7.8
	617ANA/ANU018	675	17,500	8.50	8.20	—	18,000	2.78	10,500	1.86	6.50	7.8
	617ANA/ANU024	675	18,000	8.70	8.40	—	18,300	2.86	10,600	1.88	6.50	7.8
690A018-B	519DS/509AS018	675	17,400	8.80	8.30	—	18,100	2.68	11,100	1.90	6.30	7.8
	519DS/509AS019	675	18,200	9.00	8.60	—	18,500	2.80	11,300	1.96	6.50	7.8
	519E018	675	17,400	8.80	8.30	—	18,100	2.68	11,100	1.90	6.30	7.8
	519DS/509AS024	675	18,200	9.00	8.60	—	18,500	2.80	11,300	1.96	6.50	7.8
	519E024	675	18,200	9.00	8.60	—	18,500	2.80	11,300	1.96	6.50	7.8
	508A024	675	18,000	9.00	8.50	—	18,500	2.80	11,300	1.96	6.50	7.8
	617ANA/ANU024	675	18,200	9.10	8.60	—	18,800	2.92	11,300	2.00	6.80	7.8
	517EN018	675	17,000	8.50	8.00	—	18,700	2.76	11,300	1.90	6.40	7.8
	513C018	675	17,000	8.40	8.00	—	18,300	2.62	11,300	1.86	6.20	7.8
	516A018	675	18,200	9.00	8.60	—	18,300	2.84	11,100	2.00	6.60	7.8
	617ANA/ANU018†	675	17,800	9.00	8.50	—	18,500	2.84	11,200	1.96	6.60	7.8
	517EN025	675	18,000	8.70	8.20	—	18,800	2.90	11,000	1.86	6.50	7.8
	513C024	675	17,800	8.70	8.40	—	18,500	2.76	11,300	1.94	6.40	7.8
	516A024	675	18,200	9.00	8.50	—	18,600	2.84	11,300	1.96	6.60	7.8
	517EN024	675	17,500	8.70	8.20	—	18,900	2.86	11,400	1.96	6.50	7.8
	690A024-A	519DS/509AS024	900	22,800	8.30	8.00	—	24,400	2.74	14,100	2.00	6.40
519DS/509AS025		900	23,200	8.40	8.10	—	24,200	2.76	14,200	2.00	6.40	7.6
519E024		900	22,800	8.30	8.00	—	24,400	2.74	14,100	1.98	6.40	7.6
508A024		900	22,600	8.30	8.00	—	24,000	2.70	14,100	2.00	6.30	7.6
510B024		900	21,400	8.00	7.80	—	24,400	2.80	14,200	2.00	6.40	7.6
519DS/509AS030B		900	23,800	8.50	8.20	—	24,600	2.84	14,400	2.04	6.60	7.6
519DS/509AS0430W		900	23,800	8.50	8.20	—	24,600	2.84	14,400	2.04	6.60	7.6
519E030		900	23,800	8.50	8.20	—	24,600	2.84	14,400	2.04	6.60	7.6
506B030		900	23,200	8.30	8.00	—	24,000	2.78	14,200	2.00	6.40	7.6
517EN024		850	21,400	7.90	7.70	—	24,400	2.76	14,200	1.98	6.30	7.6
517EN025		850	22,000	8.00	7.80	—	24,600	2.84	14,200	2.00	6.50	7.6
513C024		900	22,000	8.00	7.70	—	23,800	2.70	14,100	1.98	6.30	7.6
516A024		900	23,000	8.30	8.00	—	24,400	2.78	14,200	2.00	6.40	7.6
517EN030†		900	23,200	8.30	8.00	—	24,600	2.80	14,300	2.00	6.60	7.6
517EN031		900	24,000	8.50	8.20	—	24,800	2.94	14,400	2.06	6.70	7.6
513C030		900	23,000	8.00	7.80	—	24,400	2.78	14,500	2.00	6.40	7.6
516A030	900	23,400	8.30	8.00	—	24,600	2.78	14,500	2.00	6.40	7.6	
617ANA/ANU018**	650	22,000	—	8.00	—	23,000	2.84	14,000	2.06	6.40	7.6	
617ANA/ANU024	900	23,400	9.00	8.50	—	24,000	2.94	14,200	2.10	6.60	7.6	
617ANA/ANU030	900	24,000	9.00	8.50	—	24,200	2.96	14,400	2.10	6.60	7.6	
690A030-A	519DS/509AS030B	1000	28,600	8.50	8.20	7.55	29,600	2.78	18,200	2.10	6.60	8.0
	519DS/509AS030W	1000	28,600	8.50	8.20	7.55	29,600	2.78	18,200	2.10	6.60	8.0
	519E030	1000	28,600	8.50	8.20	7.55	29,600	2.78	18,200	2.10	6.60	8.0
	506B030	1125	28,000	8.30	8.00	7.35	29,600	2.74	18,300	2.10	6.40	8.0
	519CS036	1125	28,800	8.40	8.10	7.45	30,200	2.86	18,500	2.14	6.60	8.0
	519DS/509AS036B	1125	29,200	8.50	8.20	7.50	30,200	2.86	18,600	2.16	6.70	8.0
	519DS036WB	1125	29,200	8.50	8.20	7.50	30,200	2.86	18,600	2.16	6.70	8.0
	519E036	1125	29,200	8.50	8.20	7.50	30,200	2.86	18,600	2.16	6.70	8.0
	508A036	1125	28,200	8.40	8.10	7.40	29,600	2.74	18,300	2.10	6.50	8.0
	506B036	1125	29,000	8.40	8.10	7.40	30,200	2.86	18,600	2.16	6.60	8.0
	510B036	1125	28,600	8.40	8.10	7.40	30,000	2.84	18,500	2.10	6.60	8.0
	517EN030	1100	27,600	8.30	8.00	7.30	30,000	2.76	18,400	2.08	6.40	8.0
	517EN031	1100	29,000	8.50	8.10	7.40	30,400	2.90	18,600	2.14	6.60	8.0
	513C030	1015	28,000	8.20	8.00	7.35	29,800	2.74	18,400	2.08	6.40	8.0
	516A030	1125	28,400	8.30	8.00	7.35	30,000	2.76	18,600	2.08	6.50	8.0
	517EN036†	1125	28,600	8.30	8.00	7.40	30,000	2.80	18,200	2.10	6.60	8.0
617ANA/ANU030	1125	29,000	8.65	8.30	7.85	30,000	2.86	18,400	2.14	6.60	8.0	
617ANA/ANU036	1125	29,000	8.50	8.20	7.65	31,000	2.88	18,600	2.14	6.70	8.0	
690A030-B	519DS/509AS030B	1000	28,600	8.50	8.20	7.45	30,000	3.16	19,300	2.22	6.80	7.8
	519E030	1000	29,600	8.50	8.20	7.45	30,000	3.16	19,300	2.22	6.80	7.8
	506B030	1125	28,000	8.30	8.00	7.25	30,000	3.10	19,400	2.18	6.70	7.8
	519CS036	1125	29,200	8.40	8.10	7.35	30,400	3.24	19,600	2.22	6.90	7.8
	519DS/509AS036	1125	29,400	8.50	8.20	7.45	30,400	3.24	19,700	2.26	6.90	7.8
	519E036	1125	30,000	8.50	8.20	7.45	30,400	3.24	19,700	2.26	6.90	7.8
	508A036	1125	28,400	8.30	8.00	7.25	30,000	3.10	19,400	2.18	6.70	7.8
	506B036	1125	29,000	8.40	8.10	7.35	30,400	3.24	19,700	2.24	6.90	7.8
	510B036	1125	29,400	8.30	8.00	7.25	30,200	3.22	19,600	2.22	6.80	7.8
	517EN030	1100	28,200	8.30	8.00	7.25	30,000	3.16	19,400	2.16	6.60	7.8
	517EN031	1100	30,000	8.40	8.10	7.35	30,600	3.28	19,800	2.24	6.90	7.8
	513C030	1015	27,600	8.30	8.00	7.25	29,800	3.10	19,500	2.16	6.70	7.8
	516A030	1125	28,000	8.30	8.00	7.30	30,200	3.12	19,700	2.18	6.60	7.8
	617ANA/ANU030†	1125	29,000	8.30	8.00	7.40	30,000	2.98	19,000	2.12	6.80	7.8
	517EN036	1125	29,000	8.30	8.00	7.30	30,400	3.18	19,800	2.18	6.80	7.8
	617ANA/ANU036	1125	28,800	8.30	8.00	7.25	30,000	3.06	19,500	2.14	6.80	7.8

See notes on page 8.

COMBINATION RATINGS Continued

OUTDOOR UNIT	APPROVED INDOOR UNIT	ARI STANDARD RATINGS* (1-Ph and 3-Ph)										
		CFM	Cooling				Heating				Sound Rating (Bels)	
			TC	Seasonal Efficiency		EER 3-ph	High Temp		Low Temp			Seasonal Efficiency HSPF
				With FDR.90‡	Without FDR.90‡		TC	COP	TC	COP		
690A031-A	519DS030B	1000	28,600	8.80	8.30	8.40	31,000	3.02	19,200	2.28	7.00	7.6
	519E030	1000	28,600	8.80	8.30	8.40	31,000	3.02	19,200	2.28	7.00	7.6
	506B030	1125	28,000	8.50	8.00	8.05	31,000	2.98	19,400	2.24	6.90	7.6
	519DS/509AS036B	1125	29,400	8.80	8.30	8.40	32,000	3.10	19,700	2.30	7.00	7.6
	519E036	1125	29,400	8.80	8.30	8.40	32,000	3.10	19,700	2.30	7.00	7.6
	508A036	1125	28,200	8.60	8.10	8.15	31,000	2.98	19,400	2.26	6.90	7.6
	506B036	1125	29,000	8.80	8.30	8.40	31,800	3.10	19,600	2.30	7.00	7.6
	517EN030	1100	27,600	8.50	8.00	8.05	31,600	2.98	19,400	2.22	6.90	7.6
	517EN031	1100	29,200	8.70	8.20	8.30	32,000	3.14	19,700	2.28	7.00	7.6
	513C030	1015	28,000	8.50	8.00	8.05	31,200	2.96	19,500	2.22	6.80	7.6
	516A030	1125	28,400	8.50	8.00	8.10	31,800	3.00	19,700	2.24	6.90	7.6
	617ANA/ANU024**	840	28,000	—	8.10	—	30,400	2.94	18,900	2.22	6.80	7.6
	617ANA/ANU030†	1125	29,600	9.00	8.70	8.60	31,000	3.02	19,000	2.26	7.00	7.6
517EN036	1125	28,400	8.50	8.00	8.10	32,000	3.04	19,700	2.24	7.00	7.6	
617ANA/ANU036	1125	28,800	8.60	8.10	8.30	31,600	3.04	19,600	2.26	7.00	7.6	
690A036-A	519CS036	1250	34,600	8.50	8.20	7.55	36,400	2.68	22,600	2.06	6.50	8.4
	519DS/509AS036B	1200	35,200	8.70	8.50	7.80	36,400	2.68	22,600	2.08	6.60	8.4
	519DS036WB	1200	35,200	8.70	8.50	7.80	36,400	2.68	22,600	2.08	6.60	8.4
	519E036	1200	35,200	8.70	8.50	7.80	36,400	2.68	22,600	2.08	6.60	8.4
	508A036	1300	34,200	8.50	8.20	7.55	36,000	2.58	22,600	2.00	6.30	8.4
	506B036	1350	35,200	8.60	8.30	7.60	36,800	2.70	23,000	2.08	6.40	8.4
	510B036	1350	34,800	8.50	8.20	7.55	36,800	2.68	22,800	2.06	6.50	8.4
	519CS042	1350	35,600	8.60	8.30	7.60	37,000	2.74	23,000	2.08	6.60	8.4
	519DS/509AS042	1350	35,200	8.60	8.30	7.65	36,800	2.68	23,000	2.08	6.60	8.4
	519DS/509AS042W	1350	35,200	8.60	8.30	7.65	36,800	2.68	23,000	2.08	6.60	8.4
	519DS/509AS043	1350	36,400	8.80	8.50	7.80	36,800	2.80	23,000	2.10	6.70	8.4
	519DS/509AS043W	1350	36,400	8.80	8.50	7.80	36,800	2.78	23,000	2.10	6.70	8.4
	519DS/509AS042C	1350	36,000	8.80	8.50	7.80	36,600	2.70	22,800	2.10	6.60	8.4
	519E042	1350	35,200	8.60	8.30	7.65	36,800	2.68	23,000	2.08	6.60	8.4
	506B042	1350	35,600	8.60	8.30	7.65	36,800	2.68	23,000	2.08	6.50	8.4
	517EN036	1350	34,400	8.30	8.00	7.40	37,000	2.64	23,000	2.00	6.50	8.4
	517E/GNS042†	1350	36,000	8.50	8.20	7.60	38,000	2.76	23,600	2.08	6.70	8.4
	517E/GNS043	1350	36,400	8.60	8.30	7.65	38,000	2.78	23,400	2.10	6.70	8.4
	617ANA/ANU036	1350	35,000	8.65	8.10	7.30	37,000	2.66	22,800	2.06	6.55	8.4
	617ANA/ANU/ANM042	1350	36,400	8.90	8.50	7.90	36,800	2.66	22,800	2.06	6.55	8.4
690A036-B	519CS036	1250	34,400	8.70	8.30	8.25	35,000	2.90	20,800	2.00	6.60	7.8
	519DS/509AS036B	1200	35,000	8.80	8.40	8.35	35,000	2.90	20,800	2.02	6.60	7.8
	519E036	1200	35,000	8.80	8.40	8.35	35,000	2.90	20,800	2.02	6.60	7.8
	508A036	1300	34,000	8.50	8.10	8.05	34,000	2.80	20,600	1.96	6.50	7.8
	506B036	1350	35,200	8.70	8.30	8.25	35,600	2.92	21,200	2.02	6.70	7.8
	510B036	1350	34,600	8.60	8.20	8.15	35,600	2.90	21,000	1.98	6.60	7.8
	519CS042	1350	35,400	8.80	8.40	8.35	36,000	2.96	21,200	2.02	6.90	7.8
	519DS/509AS042	1350	35,200	8.70	8.30	7.65	35,600	2.92	21,200	2.02	6.70	7.8
	519DS/509AS042W	1350	35,200	8.70	8.30	8.30	35,600	2.92	21,200	2.02	6.70	7.8
	519DS/509AS043	1350	36,000	8.90	8.50	8.45	36,800	3.02	21,200	2.06	6.80	7.8
	519DS/509AS043W	1350	36,000	8.90	8.50	8.45	35,800	3.02	21,200	2.06	6.80	7.8
	519DS/509AS042C	1350	35,800	8.80	8.40	8.35	35,400	2.94	21,000	2.04	6.70	7.8
	519E042	1350	35,200	8.70	8.30	7.65	35,600	2.92	21,200	2.02	6.90	7.8
	506B042	1350	35,200	8.60	8.20	8.15	35,600	2.92	21,200	2.02	6.60	7.8
	517EN036	1350	34,400	8.40	8.00	8.00	35,800	2.86	21,200	1.96	6.60	7.8
	617ANA/ANU/ANM042†	1350	35,400	9.00	8.20	8.50	35,800	2.88	21,000	2.02	7.00	7.8
	517E/GNS043	1350	35,800	8.60	8.20	8.15	36,400	3.00	21,800	2.02	6.80	7.8
617ANA/ANM030**	1075	34,000	—	8.00	8.00	34,800	2.80	20,400	2.00	6.60	7.8	
617ANA/ANU036	1350	34,800	8.50	8.10	7.90	35,200	2.88	21,000	1.98	6.70	7.8	
517E/GNS042	1350	35,600	8.60	8.20	8.00	36,600	2.98	21,800	2.02	6.80	7.8	
690A042-A	519CS042	1500	40,000	8.30	8.00	7.50	41,500	2.70	25,400	2.06	6.50	8.0
	519DS/509AS042	1550	40,000	8.50	8.10	7.60	41,500	2.68	25,400	2.06	6.50	8.0
	519DS/509AS042W	1550	39,500	8.50	8.10	7.60	41,500	2.66	25,400	2.06	6.45	8.0
	519DS/509AS043	1575	41,500	8.60	8.30	7.80	42,000	2.78	25,600	2.10	6.60	8.0
	519DS/509AS043W	1575	41,500	8.60	8.30	7.75	42,000	2.76	25,600	2.10	6.60	8.0
	519DS/509AS042C	1500	41,000	8.50	8.30	7.75	41,000	2.68	25,200	2.06	6.50	8.0
	519E042	1550	40,000	8.50	8.10	7.60	41,500	2.68	25,400	2.06	6.50	8.0
	506B042	1575	39,000	8.30	8.00	7.55	41,000	2.56	25,200	2.00	6.20	8.0
	519CS048	1500	39,500	8.40	8.10	7.60	42,000	2.70	25,400	2.06	6.50	8.0
	519DS048	1575	40,500	8.50	8.20	7.65	42,500	2.78	25,800	2.10	6.60	8.0
	519DS/509AS048W	1575	40,500	8.50	8.20	7.70	42,500	2.78	25,800	2.10	6.60	8.0
	519DS049	1575	42,000	8.70	8.50	7.95	42,500	2.80	25,600	2.10	6.70	8.0
	519DS/509AS048C	1575	41,500	8.70	8.40	7.90	42,000	2.74	25,400	2.08	6.60	8.0
	519E048	1575	40,500	8.50	8.20	7.65	42,500	2.78	25,800	2.10	6.60	8.0
	508A048	1575	40,500	8.40	8.10	7.60	41,500	2.72	25,600	2.08	6.50	8.0
	506B049	1575	42,000	8.50	8.20	7.70	42,000	2.76	25,600	2.10	6.60	8.0
	510B048	1575	41,000	8.40	8.10	7.60	42,500	2.86	26,000	2.10	6.70	8.0
	517E/GNS042†	1575	40,500	8.30	8.00	7.60	43,000	2.78	26,200	2.06	6.60	8.0
	517E/GNS043	1575	41,500	8.50	8.10	7.60	43,000	2.74	26,000	2.06	6.60	8.0
517E/GNS048	1575	41,000	8.50	8.10	7.60	43,000	2.84	26,200	2.10	6.70	8.0	
517E/GNS049	1575	42,000	8.60	8.20	7.65	43,000	2.80	26,000	2.10	6.70	8.0	
690A042-B	519CS042	1500	40,500	8.30	8.00	7.50	41,500	2.70	25,400	2.06	6.50	8.0
	519DS/509AS042	1550	40,500	8.50	8.10	7.60	41,500	2.68	25,400	2.06	6.50	8.0
	519DS/509AS042W	1550	40,000	8.50	8.10	7.60	41,500	2.66	25,400	2.06	6.45	8.0
	519DS/509AS043	1575	42,000	8.60	8.30	7.80	42,000	2.78	25,600	2.10	6.60	8.0
	519DS/509AS043W	1575	42,000	8.60	8.30	7.75	42,000	2.76	25,600	2.10	6.60	8.0
	519DS/509AS042C	1500	41,500	8.50	8.30	7.75	41,000	2.68	25,200	2.06	6.50	8.0
	519E042	1550	40,500	8.50	8.10	7.60	41,500	2.68	25,400	2.06	6.50	8.0
	506B042	1575	39,500	8.30	8.00	7.55	41,000	2.56	25,200	2.00	6.20	8.0
	519CS048	1500	40,000	8.40	8.10	7.60	42,000	2.70	25			

COMBINATION RATINGS Continued

OUTDOOR UNIT	APPROVED INDOOR UNIT	ARI STANDARD RATINGS* (1-Ph and 3-Ph)										
		CFM	Cooling				Heating				Sound Rating (Bels)	
			TC	Seasonal Efficiency		EER 3-ph	High Temp		Low Temp			Seasonal Efficiency HSPF
				With FDR.90†	Without FDR.90†		TC	COP	TC	COP		
690A042-B	519E048	1575	41,000	8.50	8.20	7.65	42,500	2.78	25,800	2.10	6.60	8.0
	508A048	1575	41,000	8.40	8.10	7.60	41,500	2.72	25,600	2.08	6.50	8.0
	506B049	1575	42,000	8.50	8.20	7.70	42,000	2.76	25,600	2.10	6.60	8.0
	510B048	1575	41,500	8.40	8.10	7.60	42,500	2.86	26,000	2.10	6.70	8.0
	517E/GNS042†	1575	41,000	8.30	8.00	7.60	43,000	2.78	26,200	2.06	6.60	8.0
	517E/GNS043	1575	42,000	8.50	8.10	7.60	43,000	2.74	26,000	2.06	6.60	8.0
	517E/GNS048	1575	41,500	8.50	8.10	7.60	43,000	2.84	26,200	2.10	6.70	8.0
	517E/GNS049	1575	42,000	8.60	8.20	7.65	43,000	2.80	26,000	2.10	6.70	8.0
	617ANA/ANU/ANM042	1575	42,000	8.90	8.20	7.60	43,000	2.72	26,200	2.18	6.80	8.0
	617ANA/ANU/ANM048	1575	42,500	9.00	8.70	8.05	44,000	2.86	26,600	2.26	7.00	8.0
617ANA/ANU036**	1300	40,000	—	8.00	7.60	42,000	2.70	26,400	2.16	6.60	8.0	
690A048-B	519CS048	1500	45,000	8.50	8.20	6.90	49,000	2.70	29,800	2.16	6.70	8.2
	519DS048	1800	46,500	8.70	8.40	7.10	50,500	2.80	30,800	2.20	6.85	8.2
	519DS/509AS048W	1800	46,500	8.70	8.40	7.10	50,500	2.80	30,800	2.20	6.85	8.2
	519DS049	1800	47,500	8.80	8.50	7.15	50,500	2.84	30,600	2.24	6.90	8.2
	519DS/509AS048C	1600	47,000	8.80	8.50	7.15	49,000	2.74	29,800	2.18	6.70	8.2
	519E048	1800	46,500	8.70	8.40	7.10	50,500	2.80	30,800	2.20	7.00	8.2
	508A048	1600	46,000	8.70	8.40	7.05	49,000	2.70	30,000	2.16	6.85	8.2
	506B049	1800	47,000	8.80	8.50	7.15	49,000	2.80	30,600	2.20	6.85	8.2
	510B048	1800	47,000	8.60	8.30	7.00	51,000	2.90	31,000	2.24	6.90	8.2
	519CS060	1600	45,000	8.60	8.30	7.00	49,000	2.70	29,800	2.14	6.70	8.2
	519DS/509AS057C	1800	47,500	8.80	8.50	7.15	50,500	2.84	30,600	2.24	6.90	8.2
	519DS/509AS060	1800	48,000	8.80	8.50	7.10	51,000	2.90	31,200	2.26	6.90	8.2
	519DS/509AS061	1800	48,500	8.90	8.60	7.20	50,000	2.90	30,800	2.24	6.90	8.2
	519E060	1800	47,500	8.80	8.50	7.15	50,500	2.84	30,600	2.24	6.90	8.2
	506B061	1800	48,000	8.80	8.50	7.15	50,500	2.90	31,200	2.26	6.90	8.2
	510B060	1800	47,500	8.80	8.50	7.10	51,500	2.90	31,400	3.26	7.00	8.2
	517E/GNS048†	1800	47,000	8.50	8.20	7.30	51,000	2.84	31,400	2.16	6.85	8.2
	517E/GNS049	1800	47,500	8.70	8.40	7.05	51,500	2.80	31,400	2.20	6.85	8.2
	517E/GNS060	1800	47,000	8.50	8.10	6.80	51,500	2.84	32,400	2.16	6.85	8.2
	517E/GNS062	1800	47,500	8.60	8.30	6.95	52,000	2.90	32,300	2.20	6.90	8.2
517E/GNS063	1800	48,000	8.70	8.40	7.05	52,000	2.88	32,000	2.20	6.90	8.2	
617ANA/ANU/ANM048	1800	47,000	9.45	9.00	7.80	49,000	2.86	31,600	2.26	7.15	8.2	
617ANA/ANU/ANM060	1800	47,500	9.30	9.00	7.60	51,000	2.88	32,400	2.26	7.20	8.2	
690A048-D	519CS048	1500	44,500	9.20	8.90	8.40	49,000	2.96	30,400	2.26	6.85	7.8
	519DS048	1700	45,500	9.20	8.90	8.40	50,500	3.08	31,200	2.30	6.90	7.8
	519DS/509AS048W	1700	45,500	9.20	8.90	8.40	50,500	3.06	31,200	2.30	6.90	7.8
	519DS049	1700	47,500	9.50	9.20	8.70	50,500	3.10	31,200	2.32	7.00	7.8
	519DS048C	1600	46,500	9.50	9.10	8.55	49,000	3.00	30,600	2.28	6.85	7.8
	519E048	1700	45,500	9.20	8.90	8.40	50,500	3.08	31,200	2.30	6.90	7.8
	508A048	1600	45,500	9.30	9.00	8.45	49,500	2.96	30,800	2.28	6.75	7.8
	506B049	1700	47,000	9.40	9.10	8.55	50,500	3.04	31,000	2.30	6.85	7.8
	510B048	1700	46,500	9.40	9.10	8.55	51,500	3.18	31,400	2.32	7.10	7.8
	519CS060	1600	47,000	9.50	9.10	8.55	51,000	3.14	31,200	2.34	7.00	7.8
	519DS/509AS057C	1700	47,000	9.50	9.10	8.60	50,500	3.10	31,200	2.32	7.00	7.8
	519DS/509AS060	1700	47,500	9.50	9.20	8.65	51,500	3.20	31,600	2.36	7.10	7.8
	519DS/509AS061	1700	48,000	9.60	9.30	8.75	52,000	3.18	31,400	2.36	7.20	7.8
	519E060	1700	47,000	9.50	9.10	8.60	50,500	3.10	31,200	2.32	7.00	7.8
	506B061	1700	48,000	9.60	9.30	8.80	51,000	3.18	31,400	2.36	7.10	7.8
	510B060	1700	47,500	9.50	9.20	8.70	52,500	3.30	31,800	2.38	7.20	7.8
	517E/GNS048	1700	46,000	9.10	8.80	8.30	51,000	3.18	31,600	2.32	6.85	7.8
	517E/GNS049†	1700	47,500	9.40	9.00	8.55	51,000	3.12	31,600	2.30	7.00	7.8
	517E/GNS060	1700	47,000	8.80	8.50	8.05	52,000	3.14	32,800	2.26	6.90	7.8
	517E/GNS062	1700	47,500	9.00	8.60	8.15	52,500	3.18	32,600	2.30	7.00	7.8
517E/GNS063	1700	48,000	9.30	9.00	8.50	52,500	3.14	32,400	2.30	7.10	7.8	
617ANA/ANU/ANM042**	1530	45,500	—	8.50	8.05	48,500	2.92	29,000	2.24	6.80	7.8	
617ANA/ANU/ANM048	1700	47,000	9.50	9.00	8.25	50,500	3.08	29,600	2.30	7.20	7.8	
617ANA/ANU/ANM060	1700	47,500	9.30	8.90	8.15	51,000	3.08	30,400	2.28	7.30	7.8	
690A060-A	519CS060	1600	54,500	8.50	8.10	7.85	58,000	2.78	36,000	2.30	6.60	8.2
	519DS/509AS057C	2000	55,500	8.50	8.20	7.95	58,000	2.80	36,800	2.30	6.60	8.2
	519DS/509AS060	2050	57,500	8.60	8.30	8.00	59,000	2.90	37,600	2.36	6.70	8.2
	519DS/509AS061	2050	57,500	8.70	8.40	8.15	59,000	2.88	37,200	2.36	6.70	8.2
	519E060	2000	55,500	8.50	8.20	7.95	58,000	2.80	36,800	2.30	6.60	8.2
	506B061	2000	58,000	8.70	8.40	8.15	59,000	2.88	37,200	2.36	6.70	8.2
	510B060	2050	57,500	8.40	8.10	7.80	59,000	2.88	37,200	2.36	6.70	8.2
	517E/GNS060	2050	56,000	8.00	7.80	7.55	60,500	2.88	39,000	2.26	6.60	8.2
	517E/GNS062	2050	57,000	8.30	8.00	7.80	60,000	2.90	38,500	2.30	6.70	8.2
	517E/GNS063	2050	58,000	8.40	8.10	7.85	61,000	2.88	38,500	2.30	6.70	8.2
	517E005 & 315016-401	2100	58,500	8.50	8.20	7.90	61,500	2.98	38,500	2.36	6.70	8.2
	617ANA/ANU/ANM048**	1750	53,500	—	8.20	8.00	60,000	3.02	38,500	2.36	7.00	8.2
	617ANA/ANU/ANM060†	2100	55,500	9.00	8.50	7.85	62,000	3.04	39,500	2.40	7.50	8.2

COP — Coefficient of Performance

EER — Energy Efficiency Ratio

HSPF — Heating Seasonal Performance Factor

TC — Total Capacity (Btu/h)

FDR — Fan-Delay Relay

*Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included. Ratings are based on:

Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor entering air temperature and 95°F (35°C) db air entering outdoor unit.

High-Temperature Heating Standard: 70°F (21°C) db indoor entering air temperature and 47°F (8°C) db 43°F (6°C) wb air entering outdoor unit.

Low-Temperature Heating Standard: 70°F (21°C) db indoor entering air temperature and 17°F (–9°C) db, 15°F (–10°C) wb air entering outdoor unit.

†Outdoor section/indoor section combination tested in accordance with DOE test procedures for heat pumps. Ratings for other combinations are determined under DOE computer simulation procedures.

‡See FDR Table.

**See page 20 for fan coil downsizing requirements.

FDR.90 TABLE

METHOD	PART/MODEL NUMBER
Indoor Fan	313902-751
Time Delay	309919-701
Relay	309471-701
Furnaces	395C, 376C, 398A, 398B, 399A
Electric	314301-468 5 KW
Heater	314301-469 7.5 KW
Packages	314301-470 10 KW
	314301-471 15 KW
	302593-433 Cooling Control
Thermostats	Not Available At This Time

NOTE: In most cases, only one of the above should be used to achieve FDR function. More than one of the methods listed above in a system may cause degradation in performance.

DETAILED COOLING CAPACITIES*

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F											
AIR		85			95			105			115		
CFM	E W B	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
690A018-A Outdoor Section With 517EN024 Indoor Section													
600	72	19.8	9.92	2.13	18.7	9.54	2.23	17.6	9.15	2.34	16.5	8.77	2.46
	67	18.0	12.7	2.05	17.0	12.3	2.15	15.9	11.8	2.25	14.9	11.4	2.36
	63††	16.6	12.2	1.99	15.6	11.8	2.08	14.6	11.4	2.18	13.6	11.0	2.28
	62	16.3	15.2	1.98	15.4	14.7	2.07	14.5	14.2	2.17	13.6	13.6	2.28
	57	15.9	15.9	1.96	15.1	15.1	2.06	14.4	14.4	2.16	13.6	13.6	2.28
675	72	20.0	10.3	2.17	19.0	9.92	2.28	17.8	9.53	2.39	16.7	9.15	2.50
	67	18.2	13.3	2.09	17.2	12.9	2.19	16.1	12.5	2.29	15.1	12.1	2.40
	63††	16.8	12.9	2.03	15.8	12.4	2.12	14.8	12.0	2.22	13.8	11.6	2.33
	62	16.7	16.1	2.02	15.7	15.5	2.12	14.8	14.8	2.22	14.1	14.1	2.34
	57	16.4	16.4	2.01	15.6	15.6	2.12	14.9	14.9	2.23	14.1	14.1	2.34
750	72	20.3	10.7	2.22	19.1	10.3	2.32	18.0	9.89	2.43	16.9	9.52	2.55
	67	18.5	14.0	2.14	17.4	13.6	2.23	16.3	13.2	2.34	15.2	12.7	2.45
	63††	17.0	13.5	2.07	16.0	13.0	2.17	15.0	12.6	2.26	13.9	12.2	2.37
	62	17.0	16.8	2.07	16.1	16.1	2.17	15.3	15.3	2.28	14.4	14.4	2.40
	57	16.9	16.9	2.07	16.1	16.1	2.17	15.3	15.3	2.28	14.4	14.4	2.40
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519DS/509AS	018	0.99	0.98	517EN	018	0.97	0.99						
	019	1.03	1.00		024	1.00	1.00						
	024	1.03	1.00		025	1.04	1.02						
519E	018	0.99	0.98	513C	018	0.98	1.01						
	024	1.03	1.00		024	1.00	1.00						
508A	024	1.02	1.00	516A	018	1.00	0.98						
510B	024	1.01	0.99		024	1.01	1.01						
	—	—	—	617ANA/ANU	018	1.02	0.99						
					024	1.05	0.99						
690A018-B Outdoor Section With 617A018 Indoor Section													
600	72	20.4	10.2	2.12	19.3	9.81	2.24	18.1	9.40	2.35	17.0	8.99	2.47
	67	18.6	13.0	2.04	17.6	12.6	2.15	16.5	12.2	2.26	15.4	11.8	2.37
	63††	17.2	12.6	1.98	16.2	12.2	2.09	15.1	11.7	2.19	14.1	11.3	2.29
	62	16.9	15.7	1.97	15.9	15.1	2.07	14.9	14.6	2.18	14.0	13.9	2.28
	57	16.3	16.3	1.94	15.5	15.5	2.05	14.7	14.7	2.17	13.9	13.9	2.28
675	72	20.7	10.6	2.17	19.5	10.2	2.28	18.3	9.75	2.39	17.1	9.35	2.51
	67	18.9	13.7	2.09	17.8	13.2	2.19	16.7	12.8	2.31	15.5	12.4	2.41
	63††	17.5	13.2	2.03	16.4	12.8	2.13	15.3	12.3	2.23	14.3	11.9	2.34
	62	17.2	16.5	2.01	16.2	15.9	2.12	15.2	15.2	2.23	14.3	14.3	2.34
	57	16.8	16.8	2.00	16.0	16.0	2.11	15.2	15.2	2.22	14.3	14.3	2.34
750	72	20.9	10.9	2.20	19.7	10.5	2.32	18.5	10.1	2.44	17.3	9.67	2.55
	67	19.1	14.3	2.13	18.0	13.9	2.24	16.8	13.4	2.34	15.7	13.0	2.45
	63††	17.6	13.8	2.06	16.6	13.3	2.17	15.5	12.9	2.27	14.4	12.4	2.38
	62	17.5	17.2	2.06	16.5	16.4	2.16	15.6	15.6	2.28	14.7	14.7	2.39
	57	17.3	17.3	2.05	16.4	16.4	2.16	15.6	15.6	2.28	14.7	14.7	2.39
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519DS/509AS	018	0.98	1.00	517EN	018	0.96	1.01						
	019	1.02	1.02		024	0.98	1.01						
	024	1.02	1.02		025	1.01	1.06						
519E	018	0.98	1.00	513C	018	0.96	1.03						
	024	1.02	1.02		024	1.00	1.02						
508A	024	1.01	1.02	516A	018	1.02	0.99						
	—	—	—		024	1.02	1.02						
				617ANA/ANU	018	1.00	1.00						
					024	1.02	1.02						

See notes on page 15.

DETAILED COOLING CAPACITIES* Continued

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F											
AIR		85			95			105			115		
CFM	E W B	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
690A024-A Outdoor Section With 517EN030 Indoor Section													
800	72	26.7	13.2	3.04	25.2	12.7	3.21	23.6	12.1	3.37	22.0	11.5	3.54
	67	24.3	16.8	2.91	22.9	16.2	3.07	21.4	15.6	3.23	19.9	15.0	3.38
	63††	22.5	16.3	2.82	21.1	15.7	2.97	19.7	15.1	3.12	18.3	14.5	3.26
	62	22.1	20.2	2.80	20.8	19.5	2.95	19.5	18.8	3.10	18.3	18.0	3.25
	57	21.4	21.4	2.76	20.3	20.3	2.92	19.3	19.3	3.08	18.2	18.2	3.25
900	72	27.1	13.7	3.11	25.5	13.2	3.27	23.9	12.6	3.44	22.2	12.0	3.60
	67	24.7	17.6	2.98	23.2	17.1	3.14	21.7	16.5	3.29	20.1	15.9	3.45
	63††	22.9	17.1	2.88	21.4	16.5	3.03	20.0	15.9	3.18	18.6	15.2	3.33
	62	22.6	21.3	2.87	21.3	20.6	3.02	20.0	19.8	3.17	18.7	18.7	3.34
	57	22.1	22.1	2.84	21.0	21.0	3.01	19.9	19.9	3.17	18.7	18.7	3.34
1000	72	27.4	14.2	3.17	25.8	13.6	3.33	24.1	13.0	3.50	22.4	12.5	3.66
	67	25.0	18.5	3.04	23.5	17.9	3.20	21.9	17.3	3.35	20.3	16.7	3.51
	63††	23.1	17.8	2.94	21.7	17.2	3.09	20.2	16.6	3.24	18.7	16.0	3.39
	62	23.0	22.3	2.93	21.7	21.5	3.09	20.4	20.4	3.25	19.2	19.2	3.42
	57	22.8	22.8	2.92	21.6	21.6	3.09	20.4	20.4	3.25	19.2	19.2	3.42
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519DS/509AS	024	0.98	0.99	517EN	024	0.92	0.97						
	025	1.00	1.00		025	0.95	0.98						
	030B	1.03	1.01		030	1.00	1.00						
	030WB	1.03	1.01		031	1.03	1.03						
519E	024	0.98	0.99	513C	024	0.95	0.98						
	030	1.03	1.01		030	0.99	1.03						
508A	024	0.97	0.99	516A	024	0.99	0.99						
506B	030	1.00	1.00		030	1.01	1.03						
510B	036	0.92	0.97	617ANA/ANU	018††	0.95	1.01						
	—	—	—		024	1.01	0.99						
	—	—	—		030	1.03	1.01						
690A030-A Outdoor Section With 517EN036 Indoor Section													
1000	72	32.9	16.5	3.70	30.9	15.8	3.95	29.0	15.1	4.18	27.0	14.4	4.42
	67	30.1	21.2	3.57	28.3	20.5	3.80	26.4	19.8	4.02	24.6	19.1	4.24
	63††	27.9	20.6	3.46	26.2	19.8	3.68	24.5	19.1	3.89	22.7	18.4	4.10
	62	27.6	25.7	3.44	25.9	24.9	3.66	24.3	23.9	3.89	22.8	22.8	4.11
	57	26.9	26.9	3.41	25.6	25.6	3.64	24.2	24.2	3.88	22.8	22.8	4.11
1125	72	33.3	17.1	3.78	31.3	16.4	4.03	29.3	15.7	4.27	27.2	15.0	4.50
	67	30.5	22.3	3.64	28.6	21.6	3.87	26.7	20.9	4.10	24.8	20.1	4.32
	63††	28.3	21.6	3.54	26.5	20.9	3.76	24.7	20.1	3.98	22.9	19.4	4.19
	62	28.1	27.1	3.53	26.4	26.1	3.75	24.9	24.9	3.98	23.4	23.4	4.22
	57	27.7	27.7	3.51	26.3	26.3	3.75	24.9	24.9	3.98	23.4	23.4	4.22
1250	72	33.6	17.7	3.86	31.5	17.0	4.10	29.5	16.3	4.34	27.4	15.6	4.57
	67	30.8	23.4	3.72	28.8	22.7	3.95	26.9	21.9	4.18	25.0	21.1	4.40
	63††	28.5	22.6	3.61	26.7	21.8	3.83	24.9	21.1	4.05	23.1	20.3	4.26
	62	28.5	28.2	3.61	27.0	27.0	3.84	25.4	25.4	4.08	23.9	23.9	4.32
	57	28.4	28.4	3.60	27.0	27.0	3.84	25.4	25.4	4.08	23.9	23.9	4.32
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519CS	036	1.01	0.99	506B	030	0.98	0.98						
519DS	036WB	1.02	1.00	510B	036	1.00	0.99						
519DS/509AS	030WB	1.00	0.97	517EN	030	0.97	0.98						
	030B	1.00	0.97		036	1.01	0.99						
	036B	1.02	1.00		031	1.01	1.00						
519E	030	1.00	0.97	513C	036	1.00	1.00						
	036	1.02	1.00		030	0.98	0.99						
508A	036	0.99	0.98	516A	030	0.99	1.00						
	—	—	—	617ANA/ANU	030	1.01	0.99						
	—	—	—		036	1.01	1.00						

See notes on page 15.

DETAILED COOLING CAPACITIES* Continued

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F											
		85			95			105			115		
CFM	E W B	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
690A030-B Outdoor Section With 617A030 Indoor Section													
875	72	33.3	16.5	3.61	31.2	15.7	3.81	29.0	14.9	4.01	26.7	14.1	4.20
	67	30.4	20.9	3.46	28.4	20.1	3.64	26.3	19.3	3.83	24.2	18.5	4.00
	63††	28.1	20.3	3.34	26.2	19.4	3.52	24.2	18.6	3.69	22.3	17.7	3.86
	62	27.7	25.1	3.31	25.8	24.1	3.49	23.9	23.1	3.67	22.1	21.9	3.84
	57	26.5	26.5	3.25	25.0	25.0	3.45	23.5	23.5	3.64	22.0	22.0	3.83
1075	72	34.1	17.6	3.74	31.8	16.8	3.93	29.5	16.0	4.13	27.2	15.2	4.32
	67	31.1	22.8	3.58	29.0	22.0	3.77	26.8	21.1	3.96	24.6	20.2	4.13
	63††	28.8	22.0	3.46	26.8	21.2	3.64	24.7	20.3	3.82	22.7	19.4	3.98
	62	28.5	27.4	3.44	26.6	26.2	3.63	24.8	24.8	3.82	23.1	23.1	4.01
	57	28.0	28.0	3.42	26.4	26.4	3.62	24.8	24.8	3.82	23.1	23.1	4.01
1250	72	34.5	18.4	3.83	32.2	17.6	4.03	29.8	16.8	4.22	27.4	16.0	4.42
	67	31.6	24.3	3.67	29.3	23.4	3.86	27.1	22.5	4.05	24.9	21.6	4.23
	63††	29.2	23.4	3.55	27.1	22.5	3.73	25.0	21.5	3.91	22.9	20.6	4.08
	62	29.1	28.9	3.55	27.3	27.3	3.74	25.6	25.6	3.95	23.8	23.8	4.14
	57	29.0	29.0	3.54	27.3	27.3	3.74	25.6	25.6	3.95	23.8	23.8	4.15
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519D	030B	1.02	1.00	510B	036	1.01	1.02						
519E	030	1.02	1.00	517EN	030	0.97	1.01						
	036	1.03	1.03		036	1.00	1.03						
506B	030	1.00	1.01		031	1.03	1.03						
	036	1.03	1.02	513C	030	0.99	1.02						
519C	036	1.01	1.02	516A	030	1.01	1.03						
519DS/509AS	036B	1.03	1.03	617ANA/ANU	030	1.00	1.00						
508A	036	1.00	1.01		036	0.99	1.02						
690A031-A Outdoor Section With 617A030 Indoor Section													
1000	72	34.3	17.2	3.32	32.3	16.5	3.51	30.3	15.8	3.70	28.3	15.1	3.90
	67	31.0	21.9	3.19	29.2	21.2	3.37	27.4	20.5	3.55	25.4	19.7	3.74
	63††	28.7	21.2	3.09	27.0	20.4	3.27	25.2	19.7	3.44	23.3	18.9	3.61
	62	28.2	26.3	3.07	26.5	25.4	3.24	24.8	24.4	3.42	23.2	23.2	3.60
	57	27.2	27.2	3.03	25.9	25.9	3.22	24.5	24.5	3.41	23.1	23.1	3.60
1125	72	34.7	17.9	3.40	32.7	17.2	3.58	30.6	16.4	3.78	28.6	15.7	3.97
	67	31.5	23.0	3.26	29.6	22.3	3.44	27.7	21.6	3.62	25.7	20.8	3.80
	63††	29.1	22.3	3.16	27.3	21.5	3.33	25.5	20.7	3.51	23.6	19.9	3.68
	62	28.7	27.6	3.14	27.0	26.6	3.32	25.3	25.3	3.50	23.9	23.9	3.69
	57	28.2	28.2	3.12	26.7	26.7	3.31	25.3	25.3	3.50	23.8	23.8	3.69
1250	72	35.1	18.5	3.46	33.0	17.8	3.65	30.9	17.1	3.84	28.8	16.3	4.03
	67	31.8	24.1	3.32	29.9	23.4	3.50	27.9	22.6	3.69	25.9	21.8	3.87
	63††	29.5	23.3	3.22	27.6	22.5	3.40	25.7	21.6	3.57	23.8	20.8	3.75
	62	29.1	28.8	3.21	27.5	27.5	3.39	26.0	26.0	3.58	24.4	24.4	3.78
	57	28.9	28.9	3.20	27.5	27.5	3.39	26.0	26.0	3.59	24.4	24.4	3.78
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519DS	030B	0.97	0.98	517EN	030	0.93	0.99						
519DS/509AS	036B	0.99	1.00		031	0.99	1.01						
519E	030	0.97	0.98		036	1.00	1.00						
	036	0.99	1.00	513C	030	0.95	0.99						
508A	036	0.95	0.99	516A	030	0.96	1.01						
506B	030	0.95	0.98	617ANA/ANU	024††	0.95	1.01						
	036	0.98	1.00		030	0.96	1.01						
	—	—	—		036	0.97	1.01						
	—	—	—		—	—	—						

See notes on page 15.

DETAILED COOLING CAPACITIES* Continued

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F											
		85			95			105			115		
CFM	E W B	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
690A036-A Outdoor Section With 517ENS042 Indoor Section													
1200	72	41.4	20.6	4.47	39.0	19.8	4.77	36.7	18.9	5.06	34.3	18.1	5.34
	67	37.7	26.4	4.33	35.6	25.5	4.60	33.4	24.7	4.88	31.2	23.8	5.15
	63††	35.0	25.6	4.21	32.9	24.7	4.48	30.8	23.8	4.74	28.8	22.9	5.00
	62	34.5	31.9	4.19	32.5	30.9	4.46	30.6	29.9	4.73	28.7	28.6	5.00
	57	33.5	33.5	4.15	31.9	31.9	4.43	30.3	30.3	4.71	28.7	28.7	4.99
1350	72	42.0	21.4	4.57	39.5	20.5	4.87	37.1	19.7	5.16	34.6	18.9	5.45
	67	38.3	27.8	4.42	36.0	26.9	4.71	33.7	26.0	4.98	31.5	25.2	5.26
	63††	35.4	26.9	4.31	33.3	26.0	4.58	31.2	25.1	4.84	29.1	24.2	5.11
	62	35.1	33.7	4.30	33.1	32.6	4.57	31.3	31.2	4.84	29.5	29.5	5.13
	57	34.6	34.6	4.28	32.9	32.9	4.56	31.2	31.2	4.85	29.5	29.5	5.13
1500	72	42.3	22.2	4.67	39.8	21.3	4.97	37.3	20.4	5.26	34.8	19.6	5.54
	67	38.7	29.2	4.52	36.3	28.3	4.80	34.0	27.3	5.08	31.7	26.5	5.36
	63††	35.8	28.2	4.40	33.6	27.2	4.67	31.5	26.3	4.94	29.3	25.4	5.20
	62	35.7	35.2	4.40	33.8	33.8	4.68	32.0	32.0	4.97	30.2	30.2	5.26
	57	35.5	35.5	4.39	33.8	33.8	4.68	32.0	32.0	4.97	30.2	30.2	5.26
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519CS	036	0.96	0.95	519E	036	0.98	0.95						
	042	0.99	0.97		042	0.98	0.97						
519DS	036WB	0.98	0.95	508A	036	0.95	0.95						
519DS/509AS	036B	0.98	0.95	506B	036	0.98	0.97						
	042	0.98	0.97		042	0.99	0.97						
	042W	0.98	0.97	510B	036	0.97	0.96						
	043	1.01	0.99	517EN	036	0.96	0.98						
	043W	1.01	0.99	517EN/GNS	042	1.00	1.00						
	042C	1.00	0.98		043	1.01	1.01						
	—	—	—	617ANA/ANU	036	0.97	0.98						
			617ANA/ANU/ANM	042	1.01	0.98							
690A036-B Outdoor Section With 617A042 Indoor Section													
1200	72	41.1	20.9	4.02	38.5	20.0	4.23	35.9	19.0	4.44	33.3	18.1	4.64
	67	37.5	26.9	3.88	35.0	26.0	4.08	32.6	25.0	4.28	30.2	24.0	4.47
	63††	34.6	26.0	3.77	32.3	25.0	3.96	30.0	24.0	4.15	27.6	23.0	4.33
	62	34.2	32.4	3.75	32.0	31.1	3.95	29.9	29.7	4.14	27.9	27.9	4.35
	57	33.4	33.4	3.72	31.6	31.6	3.93	29.8	29.8	4.14	27.9	27.9	4.34
1350	72	41.6	21.6	4.10	38.9	20.7	4.32	36.3	19.8	4.53	33.6	18.9	4.73
	67	37.9	28.3	3.96	35.4	27.3	4.16	32.9	26.3	4.36	30.4	25.3	4.56
	63††	35.0	27.3	3.85	32.6	26.3	4.04	30.3	25.2	4.23	27.9	24.2	4.42
	62	34.8	33.9	3.84	32.6	32.4	4.04	30.6	30.6	4.25	28.6	28.6	4.46
	57	34.4	34.4	3.82	32.5	32.5	4.04	30.6	30.6	4.25	28.6	28.6	4.46
1500	72	41.9	22.4	4.19	39.2	21.4	4.40	36.5	20.5	4.61	33.7	19.6	4.81
	67	38.2	29.6	4.04	35.7	28.5	4.24	33.1	27.5	4.44	30.6	26.5	4.64
	63††	35.3	28.4	3.93	32.9	27.4	4.12	30.5	26.3	4.31	28.1	25.2	4.50
	62	35.3	35.1	3.93	33.2	33.2	4.14	31.2	31.2	4.35	29.2	29.2	4.57
	57	35.2	35.2	3.93	33.2	33.2	4.14	31.3	31.3	4.35	29.2	29.2	4.56
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519CS	036	0.97	0.96	508A	036	0.96	0.96						
	042	1.00	0.98		506B	036	0.99	0.98					
519DS/509AS	036B	0.99	0.97	510B	042	0.99	0.98						
	042	0.99	0.98		036	0.98	0.97						
	142	0.99	0.98	517EN	036	0.97	0.99						
	043	1.02	1.00	517E/GNS	042	1.01	1.02						
	143	1.02	1.00		043	1.01	1.03						
	242	1.01	1.00	617ANA/ANU	030††	0.96	0.99						
	036	0.99	0.97		036	0.98	0.99						
519E	042	0.99	0.98	617ANA/ANU/ANM	042	1.00	1.00						

See notes on page 15.

DETAILED COOLING CAPACITIES* Continued

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F													
		85			95			105			115				
CFM	E W B	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**		
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡			
690A042-A Outdoor Section With 517E/GNS042 Indoor Section															
1400	72	46.4	23.1	5.12	43.8	22.2	5.45	41.2	21.2	5.77	38.6	20.3	6.09		
	67	42.4	29.5	4.94	40.0	28.6	5.25	37.5	27.6	5.56	35.1	26.6	5.87		
	63††	39.3	28.6	4.80	37.0	27.6	5.10	34.7	26.6	5.39	32.4	25.6	5.69		
	62	38.7	35.7	4.77	36.5	34.6	5.07	34.4	33.4	5.38	32.3	32.1	5.68		
	57	37.6	37.6	4.72	35.8	35.8	5.04	34.0	34.0	5.35	32.2	32.2	5.67		
1575	72	47.0	24.0	5.24	44.4	23.0	5.56	41.7	22.0	5.89	38.9	21.1	6.21		
	67	43.0	31.1	5.05	40.5	30.1	5.36	38.0	29.1	5.68	35.4	28.1	5.98		
	63††	39.8	30.0	4.91	37.5	29.0	5.21	35.1	28.0	5.51	32.7	27.0	5.80		
	62	39.4	37.7	4.89	37.2	36.4	5.20	35.1	34.9	5.51	33.1	33.1	5.83		
	57	38.8	38.8	4.86	36.9	36.9	5.18	35.0	35.0	5.51	33.1	33.1	5.83		
1750	72	47.5	24.7	5.34	44.7	23.8	5.67	42.0	22.8	6.00	39.2	21.9	6.32		
	67	43.4	32.5	5.16	40.9	31.5	5.47	38.3	30.5	5.78	35.7	29.5	6.09		
	63††	40.2	31.4	5.01	37.8	30.4	5.32	35.4	29.3	5.61	33.0	28.3	5.91		
	62	40.1	39.3	5.00	37.9	37.8	5.32	35.9	35.9	5.64	33.9	33.9	5.97		
	57	39.8	39.8	5.00	37.9	37.9	5.32	35.9	35.9	5.64	33.9	33.9	5.97		
Multipliers for Determining the Performance With Other Indoor Sections															
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling									
		Capacity	Power			Capacity	Power								
519CS	042	0.99	0.96	519E	042	0.99	0.97								
	048	0.98	0.97		048	1.00	0.98								
519DS	048	1.00	0.98	508A	048	1.00	0.98								
	049	1.04	1.00		506B	042	0.96	0.96							
519DS/509AS	048C	1.02	0.99	510B 517E/GNS	049	1.04	0.99								
	042	0.99	0.97		048	1.01	0.99								
	042W	0.98	0.97		042	1.00	1.00								
	043	1.02	0.99		043	1.02	1.01								
	043W	1.02	0.99		048	1.01	1.00								
	042C	1.01	0.98		049	1.04	1.01								
	048W	1.00	0.98		—	—	—								
	690A042-B Outdoor Section With 517E/GNS042 Indoor Section														
	1400	72	47.1		23.5	5.16	44.4	22.5	5.46	41.7	21.5	5.76	38.8	20.5	6.04
67		43.0	30.0	4.96	40.5	29.0	5.24	37.9	27.9	5.53	35.2	26.9	5.80		
63††		39.8	29.1	4.81	37.4	28.0	5.08	34.9	26.9	5.35	32.4	25.9	5.61		
62		39.3	36.3	4.78	37.0	35.1	5.06	34.6	33.8	5.33	32.4	32.3	5.61		
57		38.2	38.2	4.73	36.3	36.3	5.02	34.3	34.3	5.32	32.4	32.4	5.61		
1575	72	47.8	24.4	5.28	45.0	23.3	5.57	42.1	22.3	5.87	39.2	21.3	6.16		
	67	43.6	31.6	5.08	41.0	30.5	5.36	38.3	29.5	5.65	35.6	28.4	5.92		
	63††	40.4	30.5	4.92	37.9	29.5	5.20	35.3	28.4	5.47	32.8	27.3	5.73		
	62	40.0	38.3	4.90	37.7	36.9	5.18	35.4	35.3	5.47	33.3	33.3	5.76		
	57	39.4	39.4	4.88	37.4	37.4	5.17	35.4	35.4	5.47	33.3	33.3	5.77		
1750	72	48.2	25.2	5.38	45.4	24.2	5.69	42.4	23.1	5.98	39.5	22.1	6.27		
	67	44.1	33.1	5.19	41.4	32.0	5.47	38.7	30.9	5.75	35.9	29.9	6.03		
	63††	40.8	31.9	5.03	38.2	30.8	5.30	35.6	29.7	5.58	33.0	28.6	5.84		
	62	40.7	40.0	5.02	38.4	38.3	5.31	36.2	36.2	5.61	34.1	34.1	5.91		
	57	40.4	40.4	5.01	38.4	38.4	5.31	36.2	36.2	5.61	34.1	34.1	5.91		
Multipliers for Determining the Performance With Other Indoor Sections															
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling									
		Capacity	Power			Capacity	Power								
519CS	042	0.99	0.96	519E	042	0.99	0.97								
	048	0.98	0.97		048	1.00	0.98								
519DS	048	1.00	0.98	508A	048	1.00	0.98								
	049	1.02	1.00		506B	042	0.96	0.96							
519DS/509AS	248	1.02	0.99	510B 517E/GNS	049	1.02	0.99								
	042	0.99	0.97		048	1.01	0.99								
	142	0.98	0.97		042	1.00	1.00								
	043	1.02	0.99		043	1.02	1.01								
	143	1.02	0.99		048	1.01	1.00								
	242	1.01	0.98		049	1.02	1.01								
	148	1.00	0.98		617ANA/ANU	036††	0.98	1.00							
	—	—	—		617ANA/ANU/ANM	042	1.02	0.99							
	—	—	—		048	1.04	1.00								

See notes on page 15.

DETAILED COOLING CAPACITIES* Continued

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F											
AIR		85			95			105			115		
CFM	E W B	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**	Capacity MBtu/h†		Total System Kw**
		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†	
690A048-B Outdoor Section With 517E/GNS048 Indoor Section													
1600	72	53.7	26.3	5.82	50.7	25.2	6.15	47.7	24.1	6.47	44.6	22.9	6.77
	67	49.1	33.5	5.63	46.3	32.3	5.94	43.6	31.1	6.24	40.8	30.0	6.52
	63††	45.4	32.4	5.47	42.7	31.2	5.76	40.2	30.0	6.05	37.5	28.9	6.32
	62	44.8	40.4	5.44	42.3	39.1	5.74	39.8	37.8	6.02	37.3	36.4	6.30
	57	43.1	43.1	5.37	41.1	41.1	5.68	39.1	39.1	5.98	37.0	37.0	6.28
1800	72	54.4	27.2	5.96	51.3	26.1	6.28	48.2	25.0	6.60	45.0	23.8	6.90
	67	49.8	35.1	5.76	47.0	33.9	6.07	44.1	32.8	6.38	41.2	31.7	6.67
	63††	46.0	33.9	5.60	43.3	32.7	5.89	40.7	31.6	6.18	37.9	30.4	6.45
	62	45.6	42.6	5.58	43.1	41.3	5.88	40.6	39.8	6.17	38.1	38.0	6.46
	57	44.5	44.5	5.53	42.4	42.4	5.85	40.3	40.3	6.16	38.1	38.1	6.46
2000	72	54.9	28.0	6.08	51.8	26.9	6.41	48.6	25.8	6.73	45.4	24.6	7.03
	67	50.4	36.7	5.89	47.5	35.5	6.20	44.5	34.3	6.50	41.5	33.1	6.79
	63††	46.6	35.4	5.73	43.8	34.2	6.02	41.0	33.0	6.31	38.2	31.7	6.57
	62	46.3	44.6	5.71	43.8	43.1	6.02	41.3	41.2	6.32	39.0	39.0	6.63
	57	45.7	45.7	5.69	43.5	43.5	6.01	41.3	41.3	6.32	39.0	39.0	6.63
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519CS	048	0.96	0.94	508A	048	0.98	0.95						
	060	0.96	0.94	506B	049	1.00	0.98						
519DS	048	0.99	0.97	510B	061	1.02	1.00						
	049	1.01	0.98		048	1.00	0.97						
519DS/509AS	048C	1.00	0.96	517E/GNS	060	1.01	0.99						
	048W	0.99	0.97		048	1.00	1.00						
	057C	1.01	0.98		049	1.01	1.02						
	060	1.02	0.99		060	1.00	1.05						
	061	1.03	1.00		062	1.01	1.03						
519E	048	0.99	0.97	617ANA/ANU/ANM	063	1.02	1.04						
	060	1.01	0.98		048	1.00	0.99						
	—	—	—		060	1.01	1.03						
690A048-D Outdoor Section With 517E/GNS048 Indoor Section													
1600	72	55.6	27.7	5.47	52.3	26.5	5.76	49.0	25.3	6.04	45.4	24.0	6.32
	67	50.3	35.2	5.26	47.2	33.9	5.54	43.9	32.6	5.80	40.7	31.4	6.05
	63	46.3	34.0	5.11	43.4	32.7	5.37	40.3	31.4	5.62	37.2	30.1	5.85
	62	45.4	42.3	5.08	42.6	40.9	5.34	39.8	39.3	5.59	37.1	37.1	5.85
	57	44.1	44.1	5.03	41.9	41.9	5.31	39.5	39.5	5.58	37.1	37.1	5.85
1700	72	56.1	28.3	5.54	52.7	27.0	5.83	49.3	25.8	6.11	45.7	24.6	6.38
	67	50.7	36.1	5.33	47.5	34.9	5.61	44.3	33.6	5.87	40.9	32.3	6.12
	63	46.7	34.9	5.18	43.7	33.6	5.44	40.6	32.2	5.69	37.4	30.9	5.92
	62	45.9	43.6	5.15	43.1	42.1	5.41	40.3	40.2	5.67	37.8	37.8	5.94
	57	44.9	44.9	5.11	42.6	42.6	5.39	40.2	40.2	5.67	37.7	37.7	5.94
1800	72	56.5	28.8	5.61	53.1	27.6	5.90	49.6	26.4	6.18	45.9	25.1	6.45
	67	51.1	37.1	5.39	47.9	35.8	5.67	44.5	34.5	5.94	41.1	33.2	6.18
	63	47.1	35.8	5.24	44.0	34.4	5.50	40.8	33.1	5.75	37.7	31.8	5.98
	62	46.3	44.8	5.21	43.5	43.1	5.48	40.9	40.9	5.75	38.4	38.4	6.02
	57	45.7	45.7	5.19	43.3	43.3	5.47	40.9	40.9	5.75	38.3	38.3	6.02
2000	72	57.2	29.8	5.73	53.7	28.6	6.02	50.1	27.4	6.30	46.4	26.2	6.57
	67	51.7	38.9	5.52	48.4	37.6	5.79	45.0	36.4	6.06	41.6	35.0	6.31
	63	47.7	37.5	5.36	44.5	36.2	5.62	41.3	34.8	5.88	38.0	33.4	6.11
	62	47.2	46.9	5.34	44.6	44.6	5.63	42.0	42.0	5.91	39.3	39.3	6.18
	57	47.1	47.1	5.34	44.6	44.6	5.63	42.0	42.0	5.91	39.4	39.4	6.18
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519CS	048	0.94	0.94	519E	060	0.99	0.98						
519DS	048	0.96	0.97	506B	061	1.01	0.99						
519D	049	1.00	0.98	510B	060	1.00	0.99						
	048C	0.98	0.97		048	0.97	0.99						
519E	048	0.96	0.97		049	1.00	1.00						
508A	048	0.96	0.96		060	0.99	1.05						
506B	049	0.99	0.98		062	1.00	1.03						
510B	048	0.98	0.97	617ANA/ANU/ANM	063	1.01	1.04						
519C	060	0.99	0.97		042††	0.96	0.98						
519DS/509AS	048W	0.96	0.97		048	0.99	0.95						
	057C	0.99	0.98		060	1.00	0.98						
	060	1.00	0.99		—	—	—						
	061	1.01	0.99		—	—	—						

See notes on page 15.

DETAILED COOLING CAPACITIES* Continued

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F											
		85			95			105			115		
CFM	E W B	Capacity MBtuht†		Total System Kw**	Capacity MBtuht†		Total System Kw**	Capacity MBtuht†		Total System Kw**	Capacity MBtuht†		Total System Kw**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
690A060-A Outdoor Section With 517E/GNS062 Indoor Section													
1800	72	65.1	32.2	7.02	61.5	30.9	7.39	57.8	29.5	7.74	54.1	28.2	8.10
	67	59.6	41.4	6.76	56.2	40.0	7.12	52.9	38.6	7.46	49.5	37.3	7.79
	63††	55.1	40.1	6.56	51.9	38.7	6.90	48.8	37.3	7.22	45.7	35.9	7.52
	62	54.5	50.1	6.53	51.6	48.6	6.87	48.6	47.0	7.20	45.7	45.3	7.53
	57	53.0	53.0	6.46	50.6	50.6	6.82	48.1	48.1	7.18	45.6	45.6	7.53
2000	72	65.7	33.3	7.16	62.0	31.9	7.53	58.3	30.5	7.89	54.5	29.3	8.25
	67	60.3	43.3	6.91	56.9	41.9	7.26	53.4	40.6	7.61	50.0	39.2	7.95
	63††	55.8	41.9	6.70	52.5	40.5	7.04	49.3	39.1	7.37	46.1	37.7	7.68
	62	55.5	52.7	6.68	52.5	51.1	7.03	49.5	49.2	7.37	46.8	46.8	7.72
	57	54.6	54.6	6.64	52.0	52.0	7.01	49.4	49.4	7.37	46.8	46.8	7.73
2050	72	65.9	33.5	7.19	62.2	32.2	7.57	58.4	30.8	7.93	54.6	29.5	8.29
	67	60.4	43.8	6.94	57.0	42.4	7.30	53.5	41.0	7.64	50.1	39.7	7.99
	63††	55.9	42.3	6.73	52.6	40.9	7.08	49.4	39.5	7.40	46.2	38.1	7.72
	62	55.7	53.3	6.72	52.7	51.6	7.07	49.7	49.6	7.42	47.0	47.0	7.77
	57	54.9	54.9	6.69	52.3	52.3	7.06	49.7	49.7	7.42	47.0	47.0	7.78
2200	72	66.2	34.3	7.29	62.5	32.9	7.67	58.6	31.5	8.03	54.8	30.2	8.38
	67	60.9	45.2	7.04	57.4	43.8	7.40	53.8	42.4	7.75	50.4	41.0	8.09
	63††	56.3	43.6	6.84	53.0	42.2	7.18	49.7	40.7	7.50	46.4	39.3	7.83
	62	56.3	55.0	6.83	53.3	53.0	7.19	50.5	50.5	7.55	47.7	47.7	7.91
	57	55.9	55.9	6.82	53.2	53.2	7.19	50.5	50.5	7.55	47.7	47.7	7.91
Multipliers for Determining the Performance With Other Indoor Sections													
Indoor Section	Size	Cooling		Indoor Section	Size	Cooling							
		Capacity	Power			Capacity	Power						
519CS	060	0.96	0.91	510B	060	1.01	0.96						
519DS/509AS	057C	0.97	0.95	517E/GNS	060	0.98	1.02						
	060	1.01	0.96		062	1.02	1.01						
	061	1.01	0.97		063	1.00	1.00						
519E	060	0.97	0.95	517E & 315016-401	005	1.03	1.02						
506B	061	1.02	0.97		617ANA/ANU/ANM	048††	0.94	1.00					
	—	—	—			060	0.97	1.00					

* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation and connected by 25 feet (7.62m) of tubing. If other than 25 feet (7.62m) of tubing is used and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 80°F (27°C) entering air at the indoor coil. For sensible capacities at other than 80°F (27°C), deduct 835 Btu/h (245kw) per 1000 cfm (480L/S) of indoor coil air for each degree below 80°F (27°C), or add 835 Btu/h (245kw) per 1000 cfm (480L/S) of indoor coil air per degree above 80°F (27°C).

** System kw is total of indoor and outdoor unit kilowatts.

†† At TVA rating indoor condition (75 edb/63 ewb). All other indoor air temperatures are at 80 edb.

‡‡ See page 20 for fan coil downsizing requirements.

HEAT PUMP HEATING PERFORMANCE

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE °F																											
		- 3				7				17				27				37				47				57			
E D B	CFM	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power				
		Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡				
690A018-A Outdoor Section With 517EN024 Indoor Section																													
65	600	5.87	5.40	1.36	7.94	7.30	1.47	10.1	9.25	1.59	12.6	11.2	1.70	15.4	14.0	1.82	18.5	18.5	1.95	22.5	22.5	2.13							
	675	6.02	5.54	1.40	8.11	7.45	1.50	10.3	9.43	1.61	12.8	11.4	1.72	15.7	14.3	1.83	18.8	18.8	1.96	22.9	22.9	2.13							
	750	6.15	5.66	1.43	8.25	7.58	1.53	10.5	9.60	1.64	13.0	11.6	1.74	15.9	14.5	1.85	19.1	19.1	1.98	23.2	23.2	2.15							
70	600	5.50	5.06	1.37	7.62	7.00	1.48	9.81	8.94	1.60	12.2	10.9	1.72	15.0	13.7	1.85	18.1	18.1	1.98	22.0	22.0	2.16							
	675	5.65	5.20	1.40	7.78	7.15	1.51	10.0	9.12	1.63	12.5	11.1	1.74	15.3	13.9	1.86	18.4	18.4	1.99	22.4	22.4	2.17							
	750	5.78	5.32	1.43	7.92	7.28	1.54	10.2	9.28	1.65	12.7	11.2	1.77	15.5	14.1	1.88	18.7	18.7	2.01	22.7	22.7	2.18							
75	600	5.12	4.71	1.37	7.26	6.67	1.49	9.47	8.64	1.61	11.9	10.6	1.74	14.6	13.3	1.88	17.6	17.6	2.02	21.4	21.4	2.20							
	675	5.26	4.84	1.40	7.43	6.83	1.52	9.66	8.81	1.64	12.1	10.7	1.76	14.9	13.5	1.89	18.0	18.0	2.03	21.8	21.8	2.21							
	750	5.40	4.96	1.43	7.58	6.96	1.55	9.83	8.96	1.67	12.3	10.9	1.79	15.1	13.8	1.91	18.2	18.2	2.04	22.2	22.2	2.22							
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size	Heating				Indoor Section		Size	Heating																			
			Capacity		Power					Capacity		Power																	
519DS/509AS		018	0.96		1.02		517EN		018	0.98		1.02																	
		019	0.98		1.00																								
		024	0.98		1.00																								
519E		018	0.96		1.02		513C		018	0.97		1.04																	
		024	0.98		1.00																								
508A		024	0.99		1.00		516A		018	0.97		0.97																	
510B		024	0.99		0.99				024	0.99		0.99																	
		—		—		617ANA/ANU		018	0.98		0.96																		
		—		—				024	0.99		0.95																		
690A018-B Outdoor Section With 617A018 Indoor Section																													
65	600	7.35	6.76	1.48	9.26	8.51	1.56	11.4	10.3	1.63	13.6	12.1	1.70	16.1	14.6	1.78	18.7	18.7	1.86	21.9	21.9	1.99							
	675	7.50	6.90	1.51	9.42	8.66	1.58	11.5	10.5	1.65	13.8	12.3	1.72	16.3	14.8	1.80	18.9	18.9	1.88	22.1	22.1	2.01							
	750	7.63	7.02	1.54	9.57	8.80	1.61	11.7	10.7	1.68	14.0	12.4	1.74	16.5	15.0	1.82	19.1	19.1	1.90	22.3	22.3	2.03							
70	600	7.06	6.49	1.49	8.94	8.22	1.57	11.0	10.0	1.65	13.2	11.7	1.72	15.7	14.3	1.81	18.3	18.3	1.89	21.4	21.4	2.02							
	675	7.20	6.63	1.52	9.11	8.37	1.60	11.2	10.2	1.67	13.6	12.0	1.75	15.9	14.5	1.82	18.5	18.5	1.91	21.7	21.7	2.04							
	750	7.34	6.75	1.55	9.26	8.51	1.63	11.4	10.4	1.70	13.6	12.1	1.77	16.1	14.6	1.84	18.7	18.7	1.93	21.9	21.9	2.05							
75	600	6.76	6.22	1.49	8.63	7.93	1.58	10.7	9.73	1.67	12.9	11.4	1.75	15.3	13.9	1.83	17.9	17.9	1.92	21.0	21.0	2.05							
	675	6.90	6.35	1.53	8.80	8.08	1.61	10.9	9.90	1.69	13.1	11.6	1.77	15.5	14.1	1.85	18.1	18.1	1.94	21.2	21.2	2.06							
	750	7.04	6.48	1.56	8.94	8.22	1.64	11.0	10.1	1.72	13.3	11.8	1.79	15.7	14.3	1.87	18.3	18.3	1.96	21.4	21.4	2.08							
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size	Heating				Indoor Section		Size	Heating																			
			Capacity		Power					Capacity		Power																	
519DS/509AS		018	0.98		1.04		517EN		018	1.01		1.04																	
		019	1.00		1.01																								
		024	1.00		1.01																								
519E		018	0.98		1.04		513C		018	0.99		1.07																	
		024	1.00		1.01																								
508A		024	1.00		1.01		516A		018	0.99		0.99																	
		—		—		024			1.01		1.01																		
				—		—		617ANA/ANU		018	1.00		1.00																
		—		—				024	1.02		0.99																		
690A024-A Outdoor Section With 517EN030 Indoor Section																													
65	800	9.41	8.66	1.74	11.8	10.8	1.88	14.4	13.1	2.03	17.4	15.4	2.18	20.6	18.8	2.33	24.7	24.7	2.54	29.9	29.9	2.80							
	900	9.59	8.82	1.77	12.0	11.0	1.91	14.6	13.3	2.05	17.6	15.7	2.20	21.0	19.1	2.35	25.2	25.2	2.55	30.4	30.4	2.81							
	1000	9.75	8.97	1.81	12.1	11.2	1.94	14.8	13.5	2.08	17.9	15.9	2.22	21.2	19.3	2.37	25.5	25.5	2.56	30.8	30.8	2.82							
70	800	9.09	8.36	1.76	11.4	10.5	1.91	14.1	12.8	2.06	17.0	15.1	2.22	20.2	18.4	2.38	24.2	24.2	2.59	29.2	29.2	2.86							
	900	9.28	8.53	1.79	11.6	10.7	1.94	14.3	13.0	2.09	17.2	15.3	2.24	20.5	18.7	2.40	24.6	24.6	2.60	29.8	29.8	2.86							
	1000	9.44	8.68	1.83	11.8	10.9	1.97	14.5	13.2	2.12	17.5	15.5	2.26	20.8	18.9	2.42	25.0	25.0	2.61	30.2	30.2	2.87							
75	800	8.73	8.03	1.77	11.1	10.2	1.93	13.7	12.5	2.09	16.5	14.7	2.26	19.8	18.0	2.43	23.6	23.6	2.64	28.6	28.6	2.91							
	900	8.91	8.20	1.81	11.3	10.4	1.96	13.9	12.7	2.12	16.8	14.9	2.28	20.1	18.3	2.45	24.0	24.0	2.65	29.1	29.1	2.91							
	1000	9.08	8.36	1.85	11.5	10.6	2.00	14.1	12.9	2.15	17.1	15.2	2.30	20.3	18.5	2.47	24.4	24.4	2.66	29.5	29.5	2.92							
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size	Heating				Indoor Section		Size	Heating																			
			Capacity		Power					Capacity		Power																	
519DS/509AS		024	0.99		1.01		517EN		024	0.99		1.01																	
		025	0.98		1.00																								
		030B	1.00		0.99																								
		030WB	1.00		0.99																								
519E		024	0.99		1.01		513C		024	0.97		1.00																	
		030	1.00		0.99																								
508A		024	0.98		1.01		516A		024	0.99		1.00																	
506B		030	0.98		0.98				030	1.00		1.01																	
510B		036	0.99		0.99		617ANA/ANU		018*	0.95		1.01																	
		—		—		024			0.98		0.93																		
		—		—		030			0.98		0.93																		

HEAT PUMP HEATING PERFORMANCE Continued

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE °F																											
E D B	CFM	-3				7				17				27				37				47				57			
		Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power				
		Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡				
690A030-A Outdoor Section With 517EN036 Indoor Section																													
65	1000	12.6	11.6	2.19	15.3	14.1	2.35	18.3	16.7	2.52	21.7	19.2	2.69	25.4	23.1	2.88	30.1	30.1	3.12	35.9	35.9	3.43							
	1125	12.8	11.8	2.23	15.6	14.3	2.39	18.6	16.9	2.55	22.0	19.5	2.72	25.8	23.4	2.90	30.6	30.6	3.13	36.5	36.5	3.42							
	1250	13.0	12.0	2.28	15.8	14.5	2.43	18.8	17.2	2.58	22.3	19.8	2.75	26.1	23.8	2.92	31.0	31.0	3.14	37.0	37.0	3.43							
70	1000	12.2	11.2	2.22	15.0	13.8	2.40	17.9	16.3	2.57	21.3	18.9	2.76	24.9	22.7	2.95	29.5	29.5	3.20	35.2	35.2	3.52							
	1125	12.4	11.4	2.27	15.2	14.0	2.43	18.2	16.6	2.60	21.6	19.2	2.78	25.3	23.0	2.97	30.0	30.0	3.21	35.8	35.8	3.51							
	1250	12.6	11.6	2.31	15.5	14.2	2.48	18.5	16.8	2.64	21.9	19.4	2.81	25.6	23.3	2.99	30.4	30.4	3.22	36.3	36.3	3.52							
75	1000	11.8	10.8	2.25	14.7	13.5	2.44	17.6	16.0	2.62	20.8	18.5	2.82	24.4	22.2	3.02	29.0	29.0	3.28	34.5	34.5	3.61							
	1125	12.0	11.1	2.30	14.9	13.7	2.48	17.8	16.3	2.66	21.2	18.8	2.84	24.8	22.6	3.04	29.4	29.4	3.29	35.1	35.1	3.60							
	1250	12.2	11.3	2.35	15.1	13.9	2.52	18.1	16.5	2.69	21.4	19.0	2.88	25.1	22.9	3.07	29.8	29.8	3.30	35.6	35.6	3.61							
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size		Heating				Indoor Section		Size		Heating																	
				Capacity		Power						Capacity		Power															
519CS		036		1.01		0.99		506B		030		0.99		1.01															
519DS		036WB		1.01		0.99		510B		036		1.00		0.99															
519DS/509AS		030WB		0.99		0.99		517EN		030		1.00		1.01															
		030B		0.99		0.99				036		1.01		0.99															
		036B		1.01		0.99				031		1.01		0.98															
519E		030		0.99		0.99				036		1.00		1.00															
		036		1.01		0.99				513C		030		0.99		1.02													
508A		036		0.99		1.01				516A		030		1.00		1.01													
		—		—		—				617ANA/ANU		030		1.00		0.98													
										036		1.03		1.00															
690A030-B Outdoor Section with 617A030 Indoor Section																													
65	850	12.6	11.6	2.27	15.8	14.5	2.40	18.9	17.3	2.52	22.2	19.7	2.63	25.6	23.3	2.73	29.8	29.8	2.88	34.8	34.8	3.06							
	1075	13.2	12.1	2.36	16.4	15.0	2.48	19.5	17.8	2.58	22.8	20.3	2.68	26.4	24.0	2.77	30.7	30.7	2.89	35.9	35.9	3.05							
	1250	13.5	12.4	2.42	16.7	15.4	2.54	19.9	18.1	2.63	23.3	20.7	2.72	26.9	24.5	2.80	31.3	31.3	2.91	36.5	36.5	3.06							
70	850	11.9	11.0	2.29	15.3	14.0	2.43	18.5	16.9	2.57	21.6	19.2	2.68	25.0	22.7	2.79	29.0	29.0	2.93	33.9	33.9	3.11							
	1075	12.5	11.5	2.37	15.8	14.5	2.51	19.0	17.3	2.63	22.3	19.8	2.73	25.8	23.4	2.82	30.0	30.0	2.95	35.0	35.0	3.10							
	1250	12.9	11.8	2.44	16.2	14.9	2.57	19.3	17.6	2.68	22.7	20.1	2.77	26.3	23.9	2.86	30.6	30.6	2.97	35.7	35.7	3.12							
75	850	11.2	10.3	2.30	14.6	13.4	2.45	17.9	16.3	2.60	21.1	18.7	2.72	24.4	22.2	2.84	28.4	28.4	2.98	33.0	33.0	3.16							
	1075	11.8	10.8	2.39	15.2	14.0	2.53	18.5	16.9	2.67	21.7	19.3	2.77	25.1	22.8	2.87	29.4	29.4	3.01	34.3	34.3	3.17							
	1250	12.2	11.2	2.46	15.6	14.3	2.60	18.9	17.2	2.72	22.1	19.7	2.82	25.7	23.4	2.91	30.0	30.0	3.04	35.1	35.1	3.19							
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size		Heating				Indoor Section		Size		Heating																	
				Capacity		Power						Capacity		Power															
519D		030B		1.00		0.94		510B		036		1.01		0.93															
519E		030		1.00		0.94		517EN		030		1.00		0.94															
		036		1.01		0.93				036		1.01		0.95															
506B		030		1.00		0.96				031		1.02		0.93															
		036		1.01		0.93				513C		030		0.99		0.95													
519C		036		1.01		0.93		516A		030		1.01		0.96															
519DS/509AS		036B		1.01		0.93		617ANA/ANU		030		1.00		1.00															
508A		036		1.00		0.96				036		1.00		0.97															
690A031-A Outdoor Section With 617A030 Indoor Section																													
65	1000	12.6	11.6	2.07	15.8	14.5	2.23	19.2	17.5	2.39	22.8	20.3	2.55	26.8	24.4	2.73	31.2	31.2	2.93	36.7	36.7	3.19							
	1125	12.9	11.9	2.11	16.1	14.8	2.27	19.5	17.8	2.42	23.1	20.5	2.58	27.1	24.7	2.75	31.6	31.6	2.94	37.3	37.3	3.20							
	1250	13.1	12.1	2.15	16.3	15.0	2.30	19.7	18.0	2.46	23.5	20.8	2.61	27.5	25.0	2.77	32.0	32.0	2.96	37.7	37.7	3.21							
70	1000	12.1	11.1	2.09	15.3	14.1	2.26	18.7	17.1	2.43	22.3	19.8	2.60	26.2	23.9	2.79	30.5	30.5	2.99	36.0	36.0	3.26							
	1125	12.3	11.4	2.14	15.6	14.3	2.30	19.0	17.3	2.46	22.6	20.1	2.63	26.6	24.2	2.81	31.0	31.0	3.00	36.5	36.5	3.27							
	1250	12.6	11.6	2.18	15.8	14.6	2.34	19.3	17.6	2.50	22.9	20.4	2.66	26.9	24.5	2.83	31.4	31.4	3.02	37.0	37.0	3.28							
75	1000	11.5	10.6	2.12	14.8	13.6	2.29	18.2	16.6	2.47	21.8	19.3	2.65	25.7	23.4	2.85	29.9	29.9	3.06	35.2	35.2	3.33							
	1125	11.8	10.8	2.16	15.1	13.9	2.33	18.5	16.9	2.51	22.1	19.6	2.68	26.0	23.7	2.87	30.4	30.4	3.07	35.8	35.8	3.34							
	1250	12.0	11.0	2.20	15.4	14.1	2.37	18.8	17.1	2.54	22.4	19.9	2.71	26.4	24.0	2.89	30.8	30.8	3.09	36.2	36.2	3.35							
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size		Heating				Indoor Section		Size		Heating																	
				Capacity		Power						Capacity		Power															
519DS		030B		1.00		1.00		517EN		030		1.02		1.03															
519DS/509AS		036B		1.03		1.01				031		1.03		0.99															
519E		030		1.00		1.00				036		1.00		1.00															
		036		1.03		1.01		513C		030		1.01		1.03															
508A		036		1.00		1.01		516A		030		1.03		1.03															
506B		030		1.00		1.01		617ANA/ANU		024*		0.95		1.01															
		036		1.03		030				1.03		1.03																	
		—		—		036				1.02		1.01																	

HEAT PUMP HEATING PERFORMANCE Continued

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE °F																											
		- 3				7				17				27				37				47				57			
E	CFM	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power				
D		Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡				
B		690A036-A Outdoor Section With 517EN042 Indoor Section																											
65	1200	16.4	15.1	2.76	19.9	18.2	2.97	23.7	21.6	3.20	27.9	24.8	3.44	32.5	29.6	3.70	38.1	38.1	4.01	45.2	45.2	4.43	45.2	45.2	4.43				
	1350	16.7	15.4	2.82	20.2	18.6	3.03	24.1	22.0	3.25	28.3	25.2	3.48	33.0	30.1	3.72	38.8	38.8	4.02	46.0	46.0	4.43	46.0	46.0	4.43				
	1500	17.0	15.6	2.88	20.5	18.8	3.08	24.4	22.3	3.30	28.7	25.5	3.52	33.5	30.5	3.75	39.3	39.3	4.05	46.6	46.6	4.45	46.6	46.6	4.45				
70	1200	15.9	14.6	2.80	19.4	17.8	3.03	23.2	21.2	3.27	27.4	24.3	3.52	32.0	29.1	3.79	37.4	37.4	4.11	44.4	44.4	4.54	44.4	44.4	4.54				
	1350	16.2	14.9	2.86	19.8	18.2	3.08	23.6	21.5	3.32	27.8	24.7	3.56	32.5	29.5	3.82	38.0	38.0	4.12	45.1	45.1	4.54	45.1	45.1	4.54				
	1500	16.5	15.2	2.92	20.1	18.4	3.14	23.9	21.8	3.37	28.2	25.0	3.60	32.9	29.9	3.85	38.5	38.5	4.15	45.7	45.7	4.55	45.7	45.7	4.55				
75	1200	15.4	14.1	2.84	19.0	17.4	3.08	22.7	20.7	3.33	26.8	23.8	3.60	31.4	28.6	3.89	36.6	36.6	4.21	43.5	43.5	4.64	43.5	43.5	4.64				
	1350	15.7	14.4	2.90	19.3	17.7	3.14	23.1	21.1	3.38	27.2	24.2	3.64	31.9	29.0	3.91	37.2	37.2	4.23	44.2	44.2	4.65	44.2	44.2	4.65				
	1500	16.0	14.7	2.96	19.6	18.0	3.19	23.4	21.4	3.43	27.6	24.5	3.68	32.3	29.4	3.95	37.8	37.8	4.25	44.9	44.9	4.66	44.9	44.9	4.66				
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size		Heating				Indoor Section		Size		Heating																	
				Capacity		Power						Capacity		Power															
519CS		036		0.96		0.99		519E		036		0.96		0.99															
		042		0.97		0.98				042		0.97		1.00															
519DS		036WB		0.96		0.99		508A		036		0.95		1.01															
519DS/509AS		036B		0.96		0.99		506B		036		0.97		0.99															
		042		0.97		1.00				042		0.97		1.00															
		042W		0.97		1.00		510B		036		0.97		1.00															
		043		0.97		0.95		517EN		036		0.97		1.02															
		043W		0.97		0.96		517E/GNS		042		1.00		1.00															
		042C		0.96		0.98				043		1.00		0.99															
		—		—		—		617ANA/ANU		036		0.97		1.01															
								617ANA/ANU/ANM		042		0.97		1.00															
690A036-B Outdoor Section With 617A042 Indoor Section																													
65	1200	13.6	12.6	2.61	17.3	15.9	2.78	21.2	19.4	2.96	25.6	22.7	3.13	30.5	27.8	3.33	36.1	36.1	3.55	43.1	43.1	3.86	43.1	43.1	3.86				
	1350	13.9	12.8	2.66	17.6	16.2	2.83	21.6	19.7	3.00	26.0	23.1	3.17	31.0	28.2	3.36	36.7	36.7	3.58	43.8	43.8	3.88	43.8	43.8	3.88				
	1500	14.2	13.1	2.72	17.9	16.4	2.89	21.9	20.0	3.05	26.4	23.4	3.22	31.5	28.6	3.40	37.2	37.2	3.61	44.4	44.4	3.91	44.4	44.4	3.91				
70	1200	13.0	11.9	2.63	16.7	15.4	2.81	20.6	18.8	3.00	24.9	22.1	3.19	29.8	27.1	3.39	35.2	35.2	3.61	42.0	42.0	3.92	42.0	42.0	3.92				
	1350	13.3	12.2	2.69	17.0	15.7	2.86	21.0	19.1	3.05	25.3	22.5	3.23	30.3	27.6	3.42	35.8	35.8	3.64	42.8	42.8	3.95	42.8	42.8	3.95				
	1500	13.6	12.5	2.75	17.3	15.9	2.92	21.3	19.4	3.10	25.7	22.8	3.27	30.7	28.0	3.46	36.3	36.3	3.67	43.4	43.4	3.97	43.4	43.4	3.97				
75	1200	12.3	11.3	2.65	16.1	14.8	2.84	20.0	18.3	3.04	24.3	21.5	3.23	29.0	26.4	3.45	34.3	34.3	3.68	41.0	41.0	3.99	41.0	41.0	3.99				
	1350	12.6	11.6	2.71	16.4	15.1	2.89	20.4	18.6	3.09	24.7	21.9	3.28	29.5	26.9	3.48	34.9	34.9	3.70	41.7	41.7	4.01	41.7	41.7	4.01				
	1500	12.9	11.8	2.77	16.7	15.4	2.95	20.7	18.9	3.14	25.0	22.2	3.32	30.0	27.3	3.52	35.4	35.4	3.74	42.4	42.4	4.04	42.4	42.4	4.04				
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size		Heating				Indoor Section		Size		Heating																	
				Capacity		Power						Capacity		Power															
519CS		036		0.98		0.97		508A		036		0.95		0.98															
		042		1.01		0.98		506B		036		0.99		0.98															
519DS/509AS		036B		0.98		0.97				042		0.99		0.98															
		042		0.99		0.98		510B		036		0.99		0.99															
		142		0.99		0.98		517EN		036		1.00		1.01															
		043		1.03		0.98		517E/GNS		042		1.02		0.99															
		143		1.00		0.95				043		1.02		0.98															
		242		0.99		0.97		617ANA/ANU		030*		0.96		0.99															
519E		036		0.98		0.97				036		0.98		0.98															
		042		0.99		0.98		617ANA/ANU/ANM		042		1.00		1.00															
690A042-A Outdoor Section With 517E/GNS042 Indoor Section																													
65	1400	18.1	16.6	3.07	22.0	20.2	3.32	26.3	24.0	3.58	31.2	27.7	3.85	36.6	33.3	4.14	43.2	43.2	4.51	51.5	51.5	5.01	51.5	51.5	5.01				
	1575	18.4	16.9	3.14	22.3	20.5	3.38	26.8	24.4	3.63	31.7	28.1	3.89	37.1	33.8	4.17	43.9	43.9	4.53	52.4	52.4	5.02	52.4	52.4	5.02				
	1750	18.7	17.2	3.20	22.7	20.8	3.44	27.1	24.7	3.68	32.1	28.5	3.94	37.6	34.2	4.21	44.4	44.4	4.57	53.0	53.0	5.05	53.0	53.0	5.05				
70	1400	17.6	16.2	3.12	21.5	19.7	3.38	25.8	23.5	3.65	30.5	27.1	3.94	35.9	32.6	4.25	42.3	42.3	4.62	50.5	50.5	5.12	50.5	50.5	5.12				
	1575	17.9	16.5	3.18	21.8	20.1	3.44	26.2	23.9	3.70	31.0	27.6	3.98	36.4	33.1	4.28	43.0	43.0	4.64	51.3	51.3	5.13	51.3	51.3	5.13				
	1750	18.3	16.8	3.25	22.2	20.4	3.50	26.6	24.2	3.76	31.5	27.9	4.03	36.9	33.6	4.32	43.6	43.6	4.67	52.0	52.0	5.16	52.0	52.0	5.16				
75	1400	17.1	15.7	3.16	21.0	19.3	3.43	25.3	23.0	3.72	29.9	26.6	4.02	35.2	32.1	4.35	41.5	41.5	4.73	49.5	49.5	5.24	49.5	49.5	5.24				
	1575	17.4	16.0	3.23	21.4	19.6	3.50	25.7	23.4	3.78	30.4	27.0	4.07	35.8	32.5	4.38	42.1	42.1	4.75	50.3	50.3	5.25	50.3	50.3	5.25				
	1750	17.7	16.3	3.30	21.7	19.9	3.56	26.0	23.7	3.83	30.8	27.4	4.12	36.2	33.0	4.42	42.7	42.7	4.78	51.0	51.0	5.28	51.0	51.0	5.28				
Multipliers for Determining the Performance With Other Indoor Sections																													
Indoor Section		Size		Heating				Indoor Section		Size		Heating																	
				Capacity		Power						Capacity		Power															
519CS		042		0.97		0.99		519E		042		0.97		1.00															
		048		0.98		1.01				048		0.99		0.99															
519DS		048		0.99		0.99		508A		048		0.97		0.99															
		049		0.99		0.98		506B		042		0.95		1.04															
519DS/509AS		048C		0.98		0.99				049		0.98		0.98															
		042		0.97		1.00		510B		048		0.99		0.96															
		042W		0.97		1.01		517E/GNS		042		1.00		1.00															
		03		0.98		0.98				043		1.00		1.01															
		043W		0.98		0.98				048		1.00		0.98															
		042C		0.95		0.99				049		1.00		0.99															
		048W		0.99		0.99				—		—		—															

HEAT PUMP HEATING PERFORMANCE Continued

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE °F																				
		- 3			7			17			27			37			47			57		
E D B	CFM	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power
		Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡
690A042-B Outdoor Section With 517E/GNS042 Indoor Section																						
65	1400	17.9	16.4	3.06	21.9	20.1	3.31	26.4	24.1	3.58	31.3	27.8	3.86	36.7	33.4	4.15	43.2	43.2	4.51	51.4	51.4	5.00
	1575	18.2	16.8	3.13	22.3	20.5	3.38	26.9	24.5	3.64	31.8	28.3	3.90	37.3	33.9	4.19	43.9	43.9	4.54	52.3	52.3	5.02
	1750	18.6	17.1	3.20	22.7	20.8	3.45	27.3	24.9	3.70	32.3	28.7	3.96	37.8	34.4	4.23	44.6	44.6	4.58	52.9	52.9	5.05
70	1400	17.2	15.8	3.08	21.3	19.6	3.36	25.8	23.5	3.64	30.6	27.1	3.93	35.9	32.7	4.24	42.3	42.3	4.61	50.3	50.3	5.10
	1575	17.6	16.2	3.16	21.7	19.9	3.43	26.2	23.9	3.70	31.1	27.6	3.98	36.5	33.2	4.28	43.0	43.0	4.64	51.2	51.2	5.12
	1750	17.9	16.5	3.23	22.1	20.3	3.50	26.6	24.3	3.77	31.6	28.0	4.04	37.0	33.7	4.32	43.6	43.6	4.68	51.8	51.8	5.16
75	1400	16.4	15.1	3.11	20.7	19.0	3.40	25.1	22.9	3.70	29.8	26.5	4.01	35.2	32.0	4.34	41.3	41.3	4.71	49.2	49.2	5.21
	1575	16.8	15.5	3.18	21.1	19.4	3.47	25.5	23.3	3.76	30.4	27.0	4.06	35.7	32.5	4.37	42.0	42.0	4.74	50.1	50.1	5.23
	1750	17.2	15.8	3.26	21.5	19.7	3.54	25.9	23.7	3.83	30.8	27.4	4.11	36.2	33.0	4.42	42.6	42.6	4.78	50.7	50.7	5.26
Multipliers for Determining the Performance With Other Indoor Sections																						
Indoor Section		Size	Heating					Indoor Section		Size	Heating											
			Capacity	Power							Capacity	Power										
519CS		042	0.97		0.99		519E		042	0.97		1.00										
		048	0.98		1.01				048	0.99		0.99										
519DS		048	0.99		0.99		508A		048	0.97		0.99										
		049	0.99		0.98				042	0.95		1.04										
		248	0.98		0.99		506B		049	0.98		0.98										
519DS/509AS		042	0.97		1.00				510B		048	0.99		0.96								
		142	0.97		1.01		517E/GNS				042	1.00		1.00								
		043	0.98		0.98				043	1.00		1.01										
		143	0.98		0.98				048	1.00		0.98										
		242	0.95		0.99				049	1.00		0.99										
		148	0.99		0.99		617ANA/ANU		036*	0.98		1.00										
		—	—		—		617ANA/ANU/ANM		042	1.00		1.02										
								048	1.02		0.99											
690A048-B Outdoor Section With 517E/GNS048 Indoor Section																						
65	1600	21.8	20.0	3.57	26.5	24.4	3.85	31.6	28.8	4.13	37.1	33.0	4.42	43.4	39.5	4.74	51.2	51.2	5.13	60.5	60.5	5.63
	1800	22.2	20.5	3.66	27.0	24.8	3.93	32.2	29.4	4.20	37.7	33.5	4.47	44.2	40.2	4.78	52.1	52.1	5.16	61.6	61.6	5.65
	2000	22.7	20.9	3.74	27.5	25.3	4.01	32.7	29.8	4.27	38.3	34.0	4.53	44.9	40.8	4.83	52.9	52.9	5.20	62.5	62.5	5.67
70	1600	20.9	19.2	3.59	25.8	23.7	3.89	30.8	28.1	4.19	36.3	32.2	4.49	42.5	38.6	4.82	50.1	50.1	5.23	60.6	60.6	5.75
	1800	21.4	19.7	3.68	26.3	24.2	3.97	31.4	28.6	4.26	36.9	32.8	4.55	43.2	39.3	4.87	51.0	51.0	5.26	60.3	60.3	5.75
	2000	21.8	20.1	3.77	26.7	24.6	4.05	31.9	29.1	4.33	37.5	33.3	4.61	43.9	39.9	4.92	51.8	51.8	5.30	61.2	61.2	5.78
75	1600	19.9	18.3	3.61	25.0	23.0	3.92	30.0	27.4	4.24	35.4	31.5	4.56	41.5	37.7	4.90	48.9	48.9	5.33	57.8	57.8	5.84
	1800	20.4	18.8	3.70	25.5	23.4	4.00	30.6	27.9	4.31	36.0	32.0	4.62	42.2	38.4	4.95	49.8	49.8	5.36	59.0	59.0	5.86
	2000	20.9	19.2	3.79	26.0	23.9	4.09	31.1	28.3	4.39	36.6	32.5	4.69	42.9	39.0	5.01	50.6	50.6	5.40	59.9	59.9	5.89
Multipliers for Determining the Performance With Other Indoor Sections																						
Indoor Section		Size	Heating					Indoor Section		Size	Heating											
			Capacity	Power							Capacity	Power										
519CS		048	0.96		1.01		508A		048	0.96		1.01										
		060	0.96		1.01				506B		049	0.96		0.97								
519DS		048	0.99		1.00		510B				061	0.99		0.97								
		049	0.99		0.99				048	1.00		0.98										
		519DS/509AS		048C	0.96		1.00		517E/GNS		060	1.01		0.99								
048W	0.99			1.00		048	1.00				1.00											
057C	0.99			0.99		049	1.01				1.02											
060	1.00			0.98		060	1.01				1.01											
061	0.99			0.97		062	1.02		1.00													
519E		048	0.99		1.00		617ANA/ANU/ANM		063	1.02		1.01										
		060	0.99		0.99				048	0.96		0.95										
										060	1.00		0.99									
690A048-D Outdoor Section With 517E/GNS049 Indoor Section																						
65	1600	21.6	19.9	3.45	26.8	24.7	3.69	32.3	29.4	3.92	38.0	33.8	4.15	44.3	40.3	4.39	51.8	51.8	4.69	60.7	60.7	5.08
	1700	21.9	20.1	3.50	27.1	24.9	3.73	32.6	29.7	3.96	38.4	34.1	4.18	44.7	40.6	4.41	52.3	52.3	4.71	61.2	61.2	5.09
	1800	22.1	20.4	3.54	27.4	25.2	3.78	32.9	30.0	4.00	38.7	34.4	4.21	45.0	41.0	4.44	52.7	52.7	4.74	61.7	61.7	5.12
	2000	22.6	20.8	3.64	27.9	25.6	3.87	33.4	30.5	4.08	39.3	34.9	4.29	45.7	41.6	4.51	53.4	53.4	4.79	62.5	62.5	5.17
70	1600	20.4	18.8	3.46	25.9	23.8	3.72	31.3	28.5	3.97	37.0	32.9	4.21	43.1	39.3	4.46	50.5	50.5	4.77	59.3	59.3	5.16
	1700	20.7	19.0	3.50	26.1	24.0	3.76	31.6	28.8	4.01	37.3	33.2	4.24	43.5	39.6	4.49	51.0	51.0	4.79	60.0	60.0	5.18
	1800	21.0	19.3	3.55	26.4	24.3	3.81	31.9	29.1	4.05	37.7	33.4	4.28	43.9	39.9	4.52	51.4	51.4	4.82	60.3	60.3	5.20
	2000	21.5	19.7	3.65	26.9	24.7	3.90	32.4	29.6	4.13	38.3	34.0	4.35	44.5	40.5	4.58	52.2	52.2	4.87	61.1	61.1	5.25
75	1600	19.1	17.6	3.46	24.8	22.8	3.74	30.3	27.6	4.01	35.9	31.9	4.26	42.0	38.2	4.53	49.2	49.2	4.84	57.8	57.8	5.24
	1700	19.4	17.9	3.51	25.1	23.1	3.78	30.6	27.9	4.05	36.3	32.2	4.30	42.4	38.6	4.56	49.7	49.7	4.87	58.7	58.7	5.26
	1800	19.7	18.1	3.56	25.3	23.3	3.83	30.9	28.2	4.09	36.6	32.5	4.33	42.8	38.9	4.59	50.1	50.1	4.89	58.9	58.9	5.28
	2000	20.2	18.6	3.65	25.9	23.8	3.92	31.4	28.6	4.17	37.2	33.0	4.41	43.4	39.5	4.65	50.9	50.9	4.95	59.7	59.7	5.33
Multipliers for Determining the Performance With Other Indoor Sections																						
Indoor Section		Size	Heating					Indoor Section		Size	Heating											
			Capacity	Power							Capacity	Power										
519C		048	0.96		1.01		519E		060	0.99		1.00										
519D		048	0.99		1.00		506B		061	1.00		0.98										
		049	0.99		1.00				510B		060	1.03		0.97								
		048C	0.96		1.00		517E/GNS		048	1.00		0.98										
519E		048	0.99		1.00				049†	1.00		1.00										
508A		048	0.97		1.02				060	1.02		1.01										
506B		049	0.99		1.02				062	1.03		1.01										
510B		048	1.01		0.99		617ANA/ANU/ANM		063	1.03		1.02										
519C		060	1.00		0.99				042*	0.96		0.98										
519DS/509AS		048W	0.99		1.01				048	0.99		1.00										
		057C	0.99		1.00				060	1.00		1.01										
		060	1.01		0.98																	
		061	1.02		1.00																	

HEAT PUMP HEATING PERFORMANCE Continued

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE °F															
		-3		7		17		27		37		47		57			
E D B	CFM	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	Capacity (Kw)		Total Power	
		Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	Total	Integ†	Kw‡	
690A060-A Outdoor Section With 517E/GNS062 Indoor Section																	
65	1800	27.5	25.3	4.10	32.9	30.3	4.42	38.6	35.2	4.74	44.5	39.5	5.06	51.6	47.0	5.44	60.1
	2000	28.0	25.7	4.19	33.5	30.8	4.50	39.2	35.8	4.82	45.2	40.1	5.13	52.4	47.7	5.49	61.0
	2200	28.5	26.2	4.29	34.0	31.2	4.59	39.8	36.3	4.90	45.7	40.6	5.19	53.1	48.3	5.55	61.8
70	1800	26.4	24.3	4.13	32.1	29.5	4.47	37.8	34.4	4.81	43.6	38.7	5.15	50.5	46.0	5.55	58.9
	2000	27.0	24.8	4.23	32.7	30.0	4.56	38.4	35.0	4.89	44.2	39.3	5.22	51.3	46.7	5.60	59.8
	2200	27.5	25.3	4.32	33.1	30.5	4.65	38.9	35.5	4.97	44.8	39.8	5.29	52.0	47.3	5.65	60.6
75	1800	25.2	23.2	4.15	31.3	28.7	4.51	36.9	33.6	4.88	42.7	37.9	5.24	49.4	45.0	5.64	57.6
	2000	25.8	23.7	4.25	31.8	29.2	4.60	37.5	34.2	4.96	43.3	38.5	5.30	50.2	45.7	5.70	58.5
	2200	26.3	24.2	4.34	32.3	29.7	4.69	38.0	34.7	5.04	43.9	39.0	5.37	50.9	46.3	5.76	59.4
Multipliers for Determining the Performance With Other Indoor Sections																	
Indoor Section		Size		Heating		Indoor Section		Size		Heating							
Capacity	Power			Capacity	Power												
519CS		060		0.97	1.01	510B		060		0.98	0.99						
519DS/509AS		057C		0.97	1.00	517E/GNS		060		1.01	1.02						
		060		0.98	0.98			062		1.00	1.00						
		061		0.98	0.99			063		1.02	1.02						
519E		060		0.97	1.00	517E & 315016-401		005		1.03	1.00						
506B		061		0.98	0.99	617ANA/ANU/ANM		048*		0.94	1.00						
		—		—	—			060		1.03	0.99						

†The Btuh heating capacity values shown are net "integrated" values from which the defrost effect has been subtracted. The Btuh heating from supplement heaters should be added to those values to obtain total system capacity.

‡The kw values include the compressor, outdoor fan motor, and indoor blower motor. The kw from supplement heaters should be added to these values to obtain total system kilowatts.

EDB = Entering Dry Bulb.

*See fan coil downsizing requirements below.

FAN COIL DOWNSIZING REQUIREMENTS:

1. The downsized fan coils are to be used only on MINIMUM static applications. The installed systems must have duct systems for maximum airflow at minimum external static pressure.
2. The indoor blower motor MUST be set to run on high speed tap by the installer. Motor is shipped, wired for medium speed tap.
3. The refrigerant charge MUST be adjusted per the suction superheat table provided on the unit information plate.
4. The maximum tube set length will be 50 feet.

SYSTEM DESIGN

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-inches water column.
2. Minimum outdoor operating air temperature for cooling mode without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature for cooling mode is 125°F (51.7°C).
4. Minimum outdoor operating air temperature for heating mode is -30°F (-34.4°C).
5. Maximum outdoor operating air temperature for heating mode is 66°F (18.9°C).
6. For reliable operation, unit should be level in all horizontal planes.
7. Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 50 feet, indoor coil below = 150 feet. (See items 8 and 9 following.) **Downsized Fan Coil: indoor coil below = 50 feet.**
8. For inter-connecting refrigerant tube lengths greater than 50 feet, consult Long-Line Application Guideline available from equipment distributor. For downsized coil application, maximum 50 foot length.
9. Not more than 36 inches of refrigerant tube should be buried in the ground. If necessary to bury tubes under a sidewalk, provide a minimum 6-inch vertical rise to the valve connections at the unit.
10. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
11. Mismatches of indoor coil capacity more than one size larger than outdoor unit capacity may result in inadequate indoor comfort.

ACCESSORY DESCRIPTION AND USAGE

1. Support Feet

Four stick-on plastic feet which raise the unit 4 inches above the mounting pad. This allows sand, dirt and other debris to be flushed from the unit base; minimizes corrosion.

SUGGESTED USE: Coastal installations.

Windy areas or where debris is normally circulating.
Rooftop installations.

2. Snow Rack

Coated wire rack which supports unit 18 inches above mounting pad to allow for drainage from unit base.

SUGGESTED USE: Heat pump installations in heavy snowfall areas.

Heat pump installations in snowdrift locations.

Heat pump installations in areas of prolonged subfreezing temperatures.

All commercial installations.

3. Indoor Fan-Delay Relay

A SPST delay relay which briefly continues operation of the indoor blower motor to provide additional cooling after the compressor cycles off.

SUGGESTED USE: For improved efficiency ratings for certain combinations of indoor and outdoor units. (Refer to ARI Unitary Directory.)

4. Energy Minder

An electric control for controlling a heat pump and gas or oil furnace system for maximum energy savings. It allows heat pump to operate down to a predetermined economic balance point temperature, then switches to allow furnace operation only below that temperature. Requires Outdoor Thermostat (Item 7) to be adjusted for economic balance point temperature.

SUGGESTED USE: All heat pump and gas- or oil-fired furnace combination systems.

5. Efficiency Alarm

A current-sensing lockout relay which provides immediate notification that compressor is not operating during a call for heating or cooling. Used with proper room thermostat, the thermostat light is turned on signifying service is required. This can minimize electrical cost increase due to operation of supplemental heaters only.

SUGGESTED USE: As a feature to notify owner immediately when the system is not operating most efficiently.

6. Bypass Solenoid Valve—Defrost

A refrigerant valve which opens during defrost to bypass refrigerant around the indoor metering piston. This increases the refrigerant flow into the warm indoor coil and thereby decreases defrost time.

SUGGESTED USE: As a feature to improve system defrost performance and decrease supplemental heat requirements during defrost.

7. Outdoor Thermostat

A SPDT temperature actuated switch which turns on supplemental electric heaters when outdoor air temperature drops below set point.

SUGGESTED USE: Heat pump installations with single-stage supplemental heaters smaller than 30 kw.

8. Secondary Outdoor Thermostat

A SPDT temperature actuated switch which turns on second-stage of supplemental electric heaters when outdoor air temperature drops below the second-stage set point.

SUGGESTED USE: Heat pump installations where two-stage operation of supplemental heaters is desired.

9. COMPROTEC—Compressor Short Cycle Protector

Solid state timing device which prevents compressor rapid recycling. Control provides an approximate 5-minute delay after power to the compressor has been interrupted for any reason, including normal room thermostat cycling.

SUGGESTED USE: Installations in areas where power interruptions are frequent.

Where user is likely to "play" with the room thermostat.

All commercial installations.

Installations where interconnecting tube length exceeds 50 feet.

High-rise applications.

10. Compressor Start Assist—Capacitor/Relay Type

Start capacitor and start relay gives "hard" boost to compressor motor at each start-up.

SUGGESTED USE: Installations where interconnecting tube length exceeds 50 feet.

Installations where outdoor design temperature exceeds 105°F (40.6°C).

Replacement installations with hard shut-off expansion valve on indoor coil.

11. Sound Blanket

Wrap around sound attenuation cover for the compressor. Reduces the sound level by about 0.2 bels.

SUGGESTED USE: Unit installed closer than 15 feet to quiet areas—bedrooms, etc.

Unit installed between two houses less than 10 feet apart.

12. Thermostatic Expansion Valve (TXV) Kits

A modulating flow control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator. Kit includes valve, adapter tubes, and external equalizer tube. Both hard shutoff and RPB type valves are available. Valves contain internal bypass with check valve; external bypass and check valve not needed.

SUGGESTED USE: For improved system performance in cooling mode for certain combinations of indoor and outdoor units. (Refer to ARI Unitary Directory.)

13. High-Pressure Switch

Auto reset SPST switch activated by refrigerant pressure on high side of refrigerant circuit. Cycles compressor off if refrigerant pressure rises to about 400 psig. Provides additional protection against compressor damage due to loss of outdoor air flow. To prevent rapid compressor recycling, COMPROTEC (Item 9) can be used with this switch.

SUGGESTED USE: Installations exposed to very "dirty" outdoor air.

Installations where condenser inlet air temperature exceeds 125°F (51.7°C).

14. Filter Drier—Bi-flow

A device for removing contaminants from refrigerant circulating in a heat pump system; two direction flow for heat pumps.

SUGGESTED USE: All field connected split system heat pumps.

15. Low-Ambient Operation Kit

This solid state head pressure controller is a fan speed control device activated by a temperature sensor. It is specifically designed to control outdoor fan motor speed in response to saturated condensing temperature. For outdoor air temperatures between 55°F and 0°F (12.8°C and -17.8°C), it maintains condensing temperature at 100°F ± 0°F (37.8° ± 5°C). For single-phase units a ball bearing fan motor is also required.

SUGGESTED USE: Cooling operation at outdoor temperatures below 55°F (12.8°C).

All commercial installations. (Note: 3-phase units have ball bearing fan motors as standard.)

16. Ball Bearing Fan Motor

A fan motor with ball bearings which permits speed reduction while maintaining bearing lubrication.

SUGGESTED USE: Required on all single-phase units where Low-ambient Operation Kit (Item 15) has been added.

17. Evaporator Freeze Thermostat

A SPST temperature actuated switch which stops unit operation when evaporator reaches freeze-up conditions.

SUGGESTED USE: With Low-ambient Operation Kit (Item 15).

18. Isolation Relay

A SPDT relay which switches the low-ambient controller out of the outdoor fan motor circuit when the heat pump switches to heating mode.

SUGGESTED USE: All heat pumps where Low-ambient Operation Kit (Item 15) has been added.

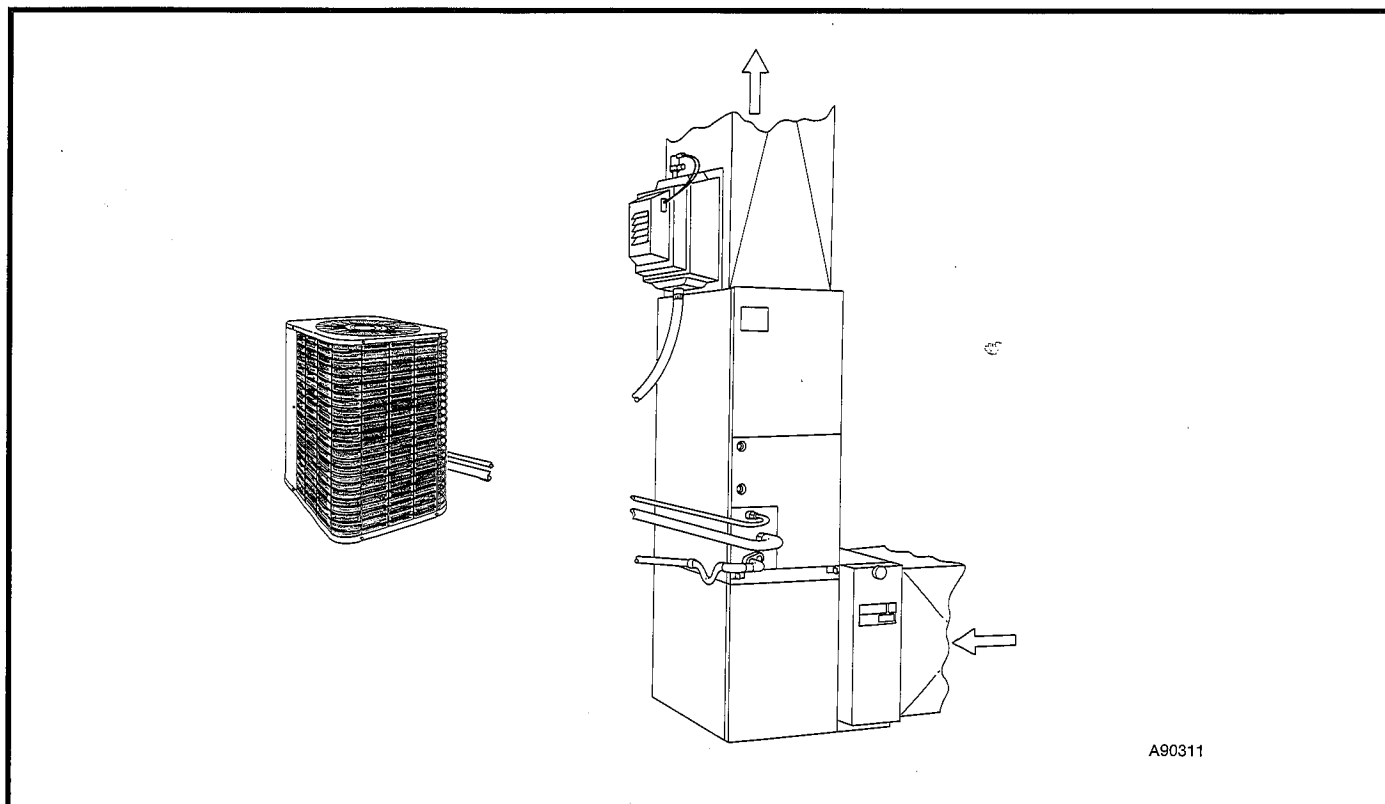
19. Liquid Solenoid Valve

An electrically operated shut-off valve to be installed at the evaporator inlet and which stops and starts refrigerant liquid flow in response to compressor operation. Maintains a column of refrigerant liquid ready for action at next compressor operation cycle. Note: Compressor start assist—Capacitor/Relay type—(Item 10) must be used also.

SUGGESTED USE: For improved system performance in air conditioners for certain combinations of indoor and outdoor units. (Refer to ARI Unitary Directory.)

In certain long line applications. (Refer to Long-Line Application Guideline.)

MATCHED SYSTEM



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE
WITH INSTALLATION INSTRUCTIONS